THE
MEDICAL AND SURGICAL REPORTER.

No. 1421.] PHILADELPHIA, MAY 24, 1884. [Vol. L.—No. 21.

ORIGINAL DEPARTMENT.

COMMUNICATIONS.

A CONTRIBUTION TO THE OPERATIVE TREATMENT OF PURULENT PLEURAL EFFUSIONS.*

BY EDWARD T. BRUEN,

Physician to Philadelphia Hospital, and Assistant Physician to University Hospital, Demonstrator of Clinical Medicine University, Physician in Out-patient Department in Children's Hospital, and Lecturer on Pathology in Women's Medical College:

AND J. WM. WHITE,

Surgeon to Philadelphia Hospital, Assistant Surgeon to University Hospital, Demonstrator of Surgery and Lecturer on Operative Surgery in University.

The following paper is based upon thirteen cases of empyema treated since 1877 in the Philadelphia Hospital, and in that of the University of Pennsylvania. They are selected from a number, because their history has been followed closely throughout. In two of these cases resection of the ribs was practiced; one of them will be subsequently detailed, and the portions of ribs removed will be exhibited. A third case, an adult Italian with an empyema of three weeks' standing, was treated by aspiration, with subsequent introduction of a drainage-tube, which was removed within three weeks with a result of perfect recovery. A fourth case, also an Italian, with purulent effusion dating six weeks prior to operation, was treated with a single aspiration, with a result of cure. The history of the fifth and sixth patients will be subsequently described; of the remainder three are still under observation. In these last three drainage-tubes have been inserted, and the cases have been steadily improving; one of them will be presented this morning. Four other cases have been entirely convalescent for three years, but still retain an open sinus, from which there is a slight discharge.

*Read before the Medical Society of the State of Pennsylvania, at its meeting in Philadelphia, 1884.

CAUSES OF EMPYEMA.

The pleura possesses the power of very rapidly secreting pure pus; our clinical records showing instances in which purulent collections have accumulated in thirty-six hours. In some of these cases the general health had been depreciated by intercurrent disease other than pleural. In one instance in the University Hospital, aneurism was associated with old pleural adhesions; in another phthisis was the antecedent.

In children the rapid formation of pus is proverbial, and in pleuro-pneumonia the effusion is often semi-purulent. Acute pleurisy can terminate in cure, or in sub-acute or chronic inflammation, with effusion, or in the same with adhesions, or empyema.

It is important to determine the proportion of purulent formations which result from undisturbed pleural effusions.

Trousseau and writers of his day advocated paracentesis, dreading purulent transformation if treatment was delayed.

Albutt (*Practitioner*, vol. 2, '72, p. 77), writing in 1872, shared this view.

The chief predisposing condition towards the purulent transformation of undisturbed pleural effusions is lowered vitality, scrofulous constitution, and intercurrent disease.

The operation of paracentesis in serous effusions is often not practiced for fear it may favor purulent transformation. This result need not be feared, if care is exercised to prevent the admission of air or organisms within the chest, and if at the same time clean antiseptic instruments are used. The accidental admission of air under the above circumstances is not necessarily serious. The predisposing causes of empyema consequent

upon paracentesis are similar to those which favor purulent transformation in undisturbed pleural effusions. Sero-fibrinous pleural effusion complicating phthisis is not frequent, for the pleurisy of this disease commonly consists in the effusion of dry lymph. If sero-fibrinous effusion does occur, it is readily convertible into pus. The operation of paracentesis does not increase the tendency to purulent transformation, and is positively indicated, since there is but little disposition for these effusions to be reabsorbed.

In phthisis, pleurisy occurs whenever hydropneumothorax is produced by rupture of the visceral pleura, and the effusion usually soon becomes purulent.

Collections of pus in the chest-wall may follow wounds of the pleura or fractures of the ribs, and peri-hepatic inflammations; or abscesses of the liver may perforate the pleura and produce empyema.

TERMINATIONS.

Empyema may last months, or years, terminating in evacuation of the pus externally through an intercostal space, or it may be evacuated through a bronchus. More rarely an empyema is evacuated through the diaphragm into the peritoneum or colon, or into the mediastinum, thence along the vertebral column as far as the psoas muscle; or through the tissues forming the abdominal wall, and so outward.

The termination of spontaneous external evacuation through an intercostal space may be preceded by periostitis with subsequent caries or necrosis of one or more of the ribs, and it is preceded by œdema of the intercostal tissues.

EFFECTS OF A PLEURAL EFFUSION UPON THE LUNG.

1. The lung may be compressed until the air is absolutely expelled and the lung itself is flattened into a small space against the vertebral column, occupying an area mostly in the scapular region, sometimes not larger than the palm of the hand.

2. The fluid may force the lung upward, so that we may outline it anteriorly, perhaps so low as the second rib, and the lung occupies a variable area of the scapular region.

3. The lung may be bound down to any portion of the chest wall, or flattened upon the diaphragm. The substance of the lung may be hepatized, or the compression may result in complete atrophy of the lung.

DIAGNOSIS OF EMPYEMA.

The diagnosis of empyema presents the usual group of physical signs indicative of non-purulent pleural collections. The crucial test is by puncture; for large collections of pus may persist in the chest with an abnormal temperature, yet without the range characteristic of collections of pus. The cases on which these observations have been made were usually those of chronic pulmonary and pleural disease, in which the pleuræ were thickened and indurated. The diagnostic puncture can be effected by a hypodermic syringe attached to a needle rather larger than the one in ordinary use.

INDICATIONS FOR TREATMENT.

In the scrofulous, or those predisposed to phthisis, it is difficult to say how long the lung may be compressed, and yet, after recovery, dilate so as to fill the chest when the pressure is removed. The healing process in a pleural cavity after effusion, whether serous or purulent, occurs through the medium of adhesions of the inflamed pleural surfaces.

Every movement of the chest parieties, then, drags the surface of the lung with it. During the persistence of the fluid the degree of motion is small, for the ribs, pressed out by an excessive quantity of fluid, are prevented from rising or falling, whilst the distension of the chest diminishes the elasticity and favors paralysis of the intercostal muscles. When the fluid is evacuated or absorbed, the character of the respiratory movements is improved, and they diminish in frequency as well as in shallowness. The lung being now adherent, is dragged by the ribs in all their increasing movements, and as the lung expands the adhesion to the chest wall increases. Each fresh expansion of the lung results in further adhesion to the costal surface, which then acquires more power over the lung to promote its return to the normal state.

Some authors* contend that air admitted into the pleural sac is opposed to the healing process of an empyema. In reply to this it may be said that the forces of expansion of the chest, are the column of air inspired, the elasticity of the thoracic parieties, and the action of the respiratory muscles, assisted by the natural tendency of the visceral pleural surface to adhere to the costal pleural surface by an action similar to that seen in a boy's sucker. The opposing forces are the elasticity of the lungs, and possibly the small amount of air contained within the pleural cavity. These latter forces are manifestly inconsiderable, when compared with the forces inflating the lung, and the granulating pleural surfaces will naturally tend more readily to adhere than the physiologically smooth pleural surfaces. With this allusion to the method by which an empyema is healed,

*Cabot, Boston Med. and Surg. Jour., August 16, 1883.

and in view of the danger of prolonged compression of the lung under these circumstances, added to the plain general principles of surgical experience in the treatment of purulent matter in the pleural sac, we submit the following indications for treatment:

Purulent effusion should be evacuated by careful aspiration as soon as recognized. The tubing and needles should be first immersed a few minutes in carbolized boiling water. The subsequent treatment in children and adults differs. In the former a cure may be accomplished by one or two aspirations. An almost indefinite list of cases outside of our own experience could be submitted to attest this point.* In children, when aspiration fails a free incision into the chest is often sufficient.†

Drainage-tubes can sometimes be disregarded in very young children, because their chest-walls are so elastic that collapse of the cavity and its obliteration by adhesions is perfectly practicable. As the age of children increases the state of their chest-walls approximates that of the adult, and after the age of ten years the treatment is usually identical. This treatment should be a preliminary trial of aspiration, but absorption failing to occur, a prompt recourse must be had to drainage by the introduction of a tube into the chest through an intercostal space, in a manner to be hereafter described. This tube should be sufficiently large to secure constant free drainage and thus prevent the stagnation of the pus and its decomposition. If thorough drainage is accomplished, the use of disinfectants by intra-thoracic injections is rendered unnecessary, unless a stimulant to the granulating surface is required. In this latter case the usual surgical principles should govern the character of the solution and its strength, the writer's preference being given to Lugol's solution.

When purulent pleural effusions occur in the course of phthisis, or in this disease when complicated with pneumothorax, the propriety of operative treatment has been already indicated.

Resection of the ribs should be practiced upon indications drawn from anatomical considerations.

If the opening through the intercostal space fails to provide sufficient drainage, or if the discharge continues three or four months with a deleterious effect upon the general health, and a physical examination shows that the pleural cavity, although diminished in size, is still so large that it is improbable that obliteration of the cavity can occur, resection of one or more ribs should be practiced. This operation offers freer access to the cavity of the pleura, and also allows the chest wall to collapse to such an extent as to produce obliteration of the cavity by permitting its walls to approximate one another.*

Finally, with reference to the withdrawal of the drainage-tube. This should be done as soon as a physical examination shows that the lung has descended sufficiently to allow approximation of the surfaces of abscess. When this has occurred, the presence of a drainage-tube in a sinus becomes a source of irritation. The sinus can be packed with lint, and treated on general principles.

Having decided in any case that no disposition exists to spontaneaus closing of the cavity after the performance of paracentesis alone, and that it is necessary to supplement this operation by one looking to the thorough, complete, and *continuous* drainage of the suppurating region, the question which presents itself is how best to secure this drainage.

This, it seems to us, after a careful review of the matter from both a clinical and an anatomical standpoint, is not a difficult one to answer. The general principle which applies to the treatment of extra-thoracic abscesses applies here. To do away with the possibility of accumulation of pus, to obviate the necessity for frequent and often mischievous interference with the granulating inner surface of such cavities by injection or irrigation, the most dependent point consistent with safety to neighboring tissues or organs is always selected for the puncture.†

This point is to be found on the right side in the seventh intercostal space, and in a line with the posterior border of the axilla. On the left side it should be one space lower, and in the same line. More posteriorly the ribs and intercostal spaces

*1. Dr. J. Hunt, Med. L. and Gaz., Feb. 15, '79. Child 14 mos. Two aspirations. Cure. 2. N. Y. Med. Rec., 1879. Child 2 years of age. Two aspirations. Cure, with thickening of pleura.

†See case Dr. G. Post, Beiruth, Syria, girl 8 years. Two asp. incision. Cure 2 mos. J. Healey and E. P. Hind, N. Y. Med. Rec., 1879. Child 3 years. Two aspirations between seventh and eighth ribs near angle. Incision between ninth and tenth rib. No drainage-tube. Recovery in a month.

*See Dandridge's cases, Exsec. of Ribs in Treatment of Empyema, Ohio Med. Jour., 1881-2, p. 57.

Homen's rev. of Estlander's, Management of Empyema by Resec. of Ribs. Arch. für Klin. Chir., Berl., 1881; also Korting, in Puncture Incision, Resec. and Antiseptic Inject.

†It has been stated (Powitt, op. cit., p. 144) that "the only point of resemblance between an empyema and an abscess is the pus which each contains." But for our purposes the above establishes the parallel quite sufficiently, even admitting it to be true, which we are not inclined to do.

are covered by large masses of muscle, the intervals between the ribs are greatly diminished; the intercostal arteries running more horizontally than the ribs themselves, cross the spaces diagonally, and are thus exposed to injury. More anteriorly the higher level of the diaphragm not only exposes it to injury during the operation, but by exercising pressure on the drainage-tube interferes with its satisfactory action; and then, too, the opening is not by any means in the most dependent position in the usual posture of a patient after this operation.

The eighth intercostal space on the left side, and the seventh on the right, may be most easily found by tracing outward the seventh rib, which is the lowest attached directly to the sternum, and which forms the upper boundary of one of these spaces and the lower boundary of the other. Or the rule given by Mr. Powitt may be adopted, viz.: Mark on the skin the position of the angle of the scapula, when the arm is by the side and also when the arm is raised above the head; one inch below the middle of the line drawn between these two points will be found the desired spot. It should be said, however, that, though this leads accurately to the eighth interspace, the "spot" described by him is in our judgment somewhat too far posterior, and, at least from the operative point of view, is open to the objection above stated.

The claim which has been advanced that because a certain number of cases of empyema have been opened in the fifth interspace anteriorly, that point should be selected for the performance of the operation, seems to us altogether without rational foundation; first, because only a small minority of the cases of empyema open spontaneously, and not by any means all of them at that interspace; and next, because the general principle which regards the workings of "nature" in such cases as a guide to the surgeon is a misleading and unsound one, which, if adopted in other cases, would often lead to serious or fatal mistakes.

Having selected the spot for the operation, its performance is extremely simple and devoid of danger. With an ordinary bistoury an incision should be made opposite the upper border of the rib, pruning the lower limit of the interspace an inch to one and a half inches in length, and extending at first through the skin and superficial fascia; the deeper fascia and the intercostal muscles should then be divided on a dissector; the pleural wall, usually found thickened and unnaturally dense and resisting, picked up with the forceps, nicked and divided to an extent equal to the external incision, and the drainage-tube inserted. The division of the pleura will usually be followed by some hemorrhage, often quite free for a few moments; but it is almost never dangerous, comes chiefly from the granulations on the inner surface of the membrane, and subsides spontaneously. The outer end of the tube should be cut off parallel, and on a level with the surface of the chest-wall should be threaded with a silver wire or with a long thread of waxed hemp or silk, so that it may be easily recovered if it should pass into the pleural cavity. A long projecting end of drainage-tube is objectionable, because it is liable to become compressed by the dressing or by the clothing, so as to almost or quite occlude it. The same objection applies to the plan of hooking a drainage-tube around a rib and tying the ends together, one which adds slightly to the severity of the operation, necessitating another wound, and at the same time leaves the tube in a position much exposed to pressure and occlusion.

The operation should be conducted with attention to antiseptic details; and we would recommend as an excellent dressing in which to receive the discharge, a thick layer of salicylated or borated cotton, over which may be placed some layers of carbolized gauze and macintosh.

If the pus escaping from an empyema cavity which has been treated in this manner remains sweet and odorless, if there is no evidence of accumulation, and, most particularly, if the cavity seems to be diminishing in size, no further local or operative treatment is either necessary or justifiable. Attention should be paid merely to the general hygiene and nutrition of the patient, and to the perviousness and efficiency of the drainage-tube.

If, however, in spite of these precautions, the pus is found to become fetid or ammoniacal, it will be proper, recognizing that this condition, in the vast majority of cases, results from imperfect discharge, and that no use of a septic or disinfectant lotion or injection can possibly remove it, to make a second and still lower opening through the chest wall, and carry a drainage-tube directly through from one to the other, allowing its curve or belly to rest upon the floor of the cavity. This may readily be done by gently passing a long, blunt-pointed probe from the original opening across the base of the chest, carefully avoiding the diaphragm, of course, and the lung, if it is at the base of the chest (a somewhat unusual occurrence), and making the end of the probe prominent in the opposite side, in the lowest available intercostal space; then cutting down

upon it just as in making the first opening, it may be drawn through, bringing with it the drainage-tube, which should now be secured at both ends.

This will usually be followed by a marked change in the character of the discharge and in the condition of the patient; not infrequently by a rapid diminution in the quantity of the pus and in the size of the cavity, which may finally become obliterated, even although with the imperfect drainage afforded by the opening it has remained stationary for a long period.

We have had two cases which illustrate this statement, but which it is not necessary to detail, as they are the ordinary cases of empyema, with the usual symptoms, and the operations were performed after the manner just described.

In a certain proportion of cases, however, this treatment proves unavailing.

Two or three months elapse, the cavity remains as large as ever, and the patient is losing in general health and strength. It then becomes advisable to adopt some means to lessen the size of the cavity, and with it the extent of suppurating surface, and at the same time time favor the formation of those adhesions which, as has already been observed, are so useful, if not essential, in drawing the lung down and aiding in its expansion and the obliteration of the cavity.

In such a case, the operation of exsection of a portion of the ribs on the affected side becomes justifiable. By permitting of the partial collapse of the chest wall on that side, it approximates the walls of the cavity, reduces its size, aids in the formation of adhesions, lessens the amount of pus secreted, and, as it may be performed with little or no danger to the patient, is evidently strongly indicated on theoretical grounds alone. And the results of the recorded operations which have been performed *in suitable cases*, amply justify the à priori view. The rules for the operation may be formulated as follows:

1. The portions of the ribs selected should be those between their angles and their sternal attachments. Posterior to this, they are less movable and are so close together that the difficulties of the operation are greatly increased.

2. Those ribs between the third and tenth should be selected which most accurately overlie the cavity.

3. The number of ribs operated upon should be proportionate to the extent of the cavity.

4. The length of the pieces excised should be proportionate to the depth of the cavity.*

*See paper by Dr. A. Homen. Langenbeck's Archiv für Klin. Chir., Band xxvi., Heft. 1, p. 151.

5. The operation should be done aseptically and subperiostially, and when so performed is almost without danger; and even in cases where large portions of ribs are removed, is followed by no permanent loss of function in the external respiratory muscles of that side.

In the case of a patient from the medical wards of Blockley Hospital, suffering from a large empyema, involving the whole pleural cavity of the left side, we performed this operation in the presence of several of our colleagues, of Dr. D. Hayes Agnew, and of the medical class.

It having been decided to remove portions of the fifth, sixth, and seventh ribs on the left side, a curved incision, ten inches in length, was carried through the overlying tissues, beginning about an inch above and within the nipple, and terminating on the axillary line at about the ninth interspace. A large horse-shoe flap, consisting of skin, subcutaneous tissue, and pectoral muscle, was reflected upwards, and the ribs exposed. A few small vessels were tied, and then the periosteum was reached from the ribs with an ordinary elevator; an eyed probe, with an abrupt curve and carrying a chain-saw attached, was passed around each rib separately at two places, and the requisite portion removed. By exercising great care in denuding the under surfaces of the ribs, employing for that purpose a gouge curved on the flat, the intercostal arteries were pushed inward with the periosteum, and it was not necessary to tie a single one of those vessels.

Two inches were removed from the fifth rib, two and a half from the sixth rib, and three from the seventh rib.

A large drainage-tube was inserted into the cavity, the external wound bandaged together by wire sutures, and an aseptic dressing and compress applied. There was absolutely no unfavorable symptoms after the operation. The greatly-improved drainage (which is one of the conspicuous benefits resulting from this operation, and is almost of itself a sufficient indication for its performance), caused an immediate improvement in the character of the discharge. The external wound united by first intention. The general

Dambrowski. Management of Empyema by Resec. and Antisep. Inject., St. Petersburg. Wehn Schr., 1881. Williams, Treph. Ribs, N. O. M. and S. Jour., 1874, p. 830.

I. F. Wert, Birmingham, M. Rev., 1881, 2 vol., 47-58; also Tatham, on Resec. of Ribs, B. M. J., London, '81.

A Plea against Resec. of Ribs, Leall, N. Y. Med. R., 1880.

Fenger, Thoracoplastic Operation, Resec. Ribs, etc., Med. News, Philadelphia, 1882, p. 337. Roser. für Oper. des Empyem., Berl. Klin. Wochen, 1878, No. 46; also Cin. L. and Clinic, 1879.

health and strength of the patient improved greatly, and the cavity notably diminished in size.

The patient died two and a half years later of an acute bowel trouble, having outlived the average period of such cases at Blockley, and being then apparently on the road to complete recovery.

This case and the method of aperation may be taken as typical, and the result is even less favorable than may be anticipated in the large majority of cases.

Our conclusions, then, may be formulated as follows:

1. Those cases of pleural effusion which are most likely to become purulent, and therefore to need operative treatment, are those occurring in persons of lowered vitality, scrofulous diathesis, or who suffer from intercurrent disease.

2. The diagnosis of empyema can only be made with absolute certainty by puncture and inspection of the fluid. This method of examination need not be delayed for fear of favoring the purulent transformation of a serous fluid, if proper aseptic precautions are observed.

3. In young children, one or two aspirations will often suffice for a cure. If these fail, simple incision of the chest without the introduction of a drainage-tube is often all that is requisite.

4. In older children, and in adults, it is proper to aspirate once; but recovery not resulting promptly, a large drainage-tube should be inserted at the most dependent point.

5. If after this drainage is still imperfect, as shown by the fetid character of the discharge, a second opening should be made, and a tube carried directly across the base of the cavity.

6. If after a suitable delay (from two to four months) there is no disposition to permanent closure of the suppurating cavity, but if the lung has expanded sufficiently to indicate that it is capable of further descent, it would then be proper to facilitate its expansion and the obliteration of the cavity by removing certain portions of the ribs of the affected side.

7. If thorough drainage is accomplished, the use of disinfectants by intra-thoracic injections is rendered unnecessary, unless a stimulant to the granulating surface is required.

8. In cases in which the lung is at the bottom of the chest and bound fast to the diaphragm, or in which it has been so atrophied prior to aspiration that there is no possibility of reinflation, or in which it is occupied by a tuberculous or an inflammatory infiltration, this operation is contra-indicated.

A MODIFICATION OF THE SPHYGMOGRAPH, BEING A CHANGE IN THE BASE OF THE INSTRUMENT OF POND.*

BY J. H. MUSSER, M. D.,
Of Philadelphia,
Chief of the Medical Dispensary of the Hospital of the University of Pennsylvania, Pathologist to the Presbyterian Hospital, etc.

The object of this paper is to introduce to the members of this society for their consideration a modification of the sphygmograph which is in common use in this country—the instrument of Pond—whereby it may be rendered still more practical, and hence more frequently resorted to by the profession. This is neither the time nor place to dwell upon the merits of the various instruments that have been devised, nor to discuss the mechanical and physiological questions which involve a correct appreciation of the action of the sphygmograph. A knowledge on your part of these questions will be taken for granted by the writer. In addition to asking your attention to the advantages of the modified base, a few moments will be taken up with discussing questions appertaining to the practical application of the instrument.

The sphygmograph, it will be admitted, has not become one of the indispensable articles of a physician's armamentarium, as its promoters and admirers had hoped for. This is readily understood, and depends upon many causes. But the chief of these causes is undoubtedly the length of time required to secure a proper tracing. Again, various instruments record various tracings, and hence there is a lack of uniformity, making comparative study of your own with the work of others almost impossible. The lax rules about regulating pressure have been so confusing that the operator would scarcely be able to select the proper one from the many that could be secured by varying degrees of pressure. Had we an instrument by the use of which these obstacles would be reduced to a minimum, undoubtedly sphygmography would grow in favor, and assume its proper relation in the diagnosis and prognosis of disease. It is confidently believed that the element of time at least will be reduced to the position of a negative opponent, by the proposed change in the instrument, while for accuracy its value will be enhanced.

The sphygmograph of Pond is generally conceded, in this country, to be the most readily applied. Simple in construction and mechanism,

*Read before the Medical Society of the State of Pennsylvania at its meeting in Philadelphia, 1884.

tracings can be secured by it more rapidly and with less discomfort to the patient, than with any instrument familiar to the writer. He has used the unmodified instrument several years, but often found bitter disappointment attend its use. The writer suggested to his former student and friend, Dr. H. N. Mateer, now of Wooster, Ohio, to pursue investigations with this instrument, for the purpose of incorporation in a thesis presented for the degree of M. D.* He, too, was often chagrined at meeting defeat in his designs. By careful study and great patience, he devised the changes which are presented to you to-day. To his genius are we indebted for the improvement, and to his generosity the writer is indebted for the pleasure of introducing it to you, for which he makes grateful acknowledgments.

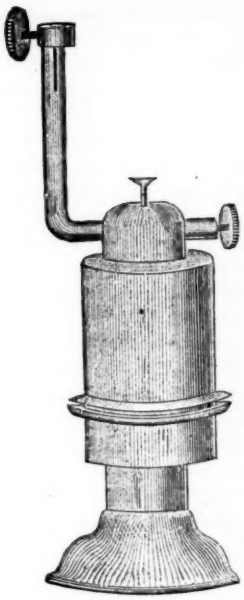
The essential portion of a sphygmograph, in considering its merits, is that which is applied to the vessel, viz.: the base. It should be so made as to closely hug the artery, without exercising such undue pressure as would modify its calibre, in order that the arterial and blood wave should be properly transmitted to the indicator. A study of the anatomical relations of the radial artery, at its most accessible point, will show at once the character of base required. This point is where the artery rests on the bone, between the styloid process of the radius and the radial flexors of the carpus. The distance from the process to the flexor is one-fourth to three-eights of an inch, in many cases even less. As the artery is on a lower plane than the upper level of these firm structures, it will be seen, and so Dr. Mateer reasoned, that the base or portion to be adjusted to the artery must be three-eighths of an inch, or even less, in width. The base of the Pond instrument is five-eighths inches wide, and it is, therefore, both in theory and in practice impossible to take tracings in very many instances with it.

It is true that in those cases in which the artery is superficial or the tissues are relaxed, admirable tracings can be secured with the old base—true, too, that tracings can be secured from any wrist; but it is held that they are secured with such high pressure that accuracy is sacrificed, or they are not intelligible. The base of the Pond machine was made for general work—to write tracings of the larger vessels, the heart, and aneurisms, etc.—but in so doing, the special work of writing tracings of the radial was sacrificed.

The wood cuts illustrate the differences in the bases, No. 1 representing the old, No. 2 the new

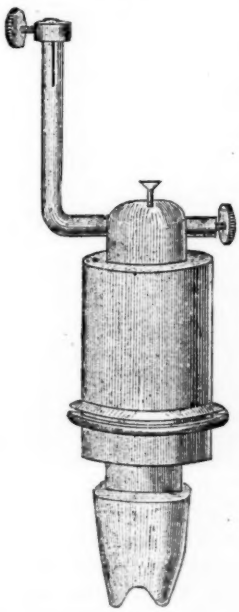
*For this thesis a prize of $50 was secured by Dr. M. from the University of Pennsylvania.

Fig. 1.



base. A further description is necessary. It is made of metal-brass, and is firmly attached to the cylin-

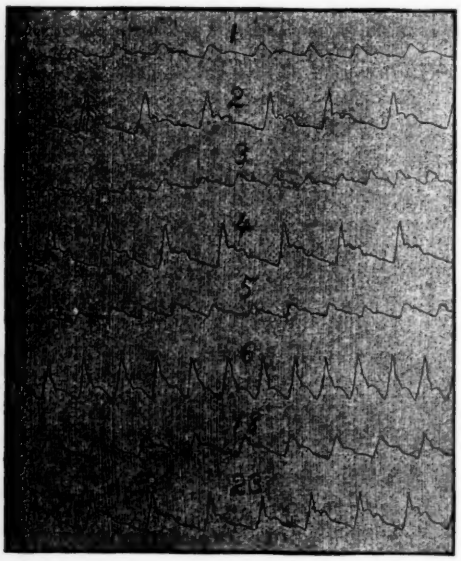
Fig. 2.



der of the instrument, yet it is readily removed

It is longer than the old base, and tapers towards the distal end. This end is round, $\frac{3}{8}$ in. in diamter, grooved to the depth of $\frac{1}{8}$ inch. This groove was made by Dr. Mateer, so that it could be more closely applied to the vessel, with the least possible pressure. The advantage of fixation of the vessel by the groove is also gained, so that the tracing is made more regular. The increase in length of the base necessitated a corresponding increase in the length of the central transmitting rod, while the diminution of its size rendered a proportionate lessening of the diameter of the flat disk attached to the distal end of the rod. Instead of the usual rubber cap, a small rubber band is made to stretch across the aperture of the base parallel to the groove. As noted above, the base can be removed at will, and the old base reapplied, for the purpose of taking those tracings for which it is fitted.

It is claimed for the modification, greater ease and rapidity of application of the instrument, and greater uniformity and clearness in the tracings. In order to more fully substantiate these claims the following illustrations of tracings, both by the old and the modified instruments, are presented:



Tracings 1 and 2, 3 and 4, 5 and 6, 18 and 23, were taken from the same individuals respectively. The persons from whom the tracings were secured were all under medical care, with symptoms of deranged circulation, save in the instance of Nos. 18 and 23. In order to correctly appreciate the tracings, one should have a distinct idea of a true tracing. By a true tracing is meant one that graphically represents the action of vessel and contents, whether it (the tracing) be normal or abnormal.

The writer can substantiate the statement of Dr. Mateer, who says a normal tracing, as taken by the Pond instrument, should consist of an upstroke, departing 10° to 15° from a perpendicular, an acute apex, and a descent at an angle of about 45°; the descent is marked by two secondary waves of almost equal size, and the general trend of the descent is a slightly curved line, with its convexity downwards. Comparing the tracing so delineated (No. 23) with tracings by a Marcy sphygmograph, one sees as much contrast as in a comparison between the "old and new base" tracings. This difference is worthy of explanation just here, in order to facilitate comparative study of tracings taken in similar forms of disease. The two forms of sphygmograph above mentioned represented two classes of instruments, and their work may therefore be compared. The lever, which is moved by the pulse, is restrained by a spring, and follows closely the movements of the vessel. The intervening rubber membrane follows the subsiding vessel in the "Pond," leaving the recording needle free to the influence of inertia. On account of this inertia, a greater height is given to the tracing, and the secondary waves are more distinctly brought out. As shown by Mateer, this same inertia causes the acute apex in the "Pond" tracing, the obtuse in the "Marcy." Any one comparing tracings of these instruments, will see the uniformity of tracing and the distinctness of outline of the former as compared with those of the latter. It is, indeed, rather marvellous to be able to read correctly the ill-defined and irregular tracing of the Marcy machine.

In conclusion, it seems not unbecoming to speak of the methods of ready use of the sphygmograph, and first regarding the wrist rest. Office work often will not permit one to delay long in arranging position, etc., and the writer has found that as good tracings can be secured without resort to this delay, and especially the discomfort of the patient, without the special rest as with it. As to pressure, its importance seems to be exaggerated. With Mateer, the writer studied it carefully, and we found the following formula a safe guide, one much more arbitrary than is generally given. Always apply that amount of pressure which yields the greatest amplitude to the tracing. The gauge adjusted to Pond's instrument is absurd,

for it measures the pressure of the entire instrument *on the wrist*, enormous often with the old base. The gauge should be adjusted to the central part, which is raised by the artery. Even then its utility is doubtful. Graduated pressure is used to secure the same amplitude to a tracing —say one-half inch. The difference in pressure necessary to accomplish this in a hard and soft pulse would be equaled or surpassed by the varying resistance of the tissues surrounding the vessel.

The rate of speed of this slide is of practical moment. It should be such that the length of the tracing, horizontally, will be equal to its height, thus permitting the fullest development of all its elements. A tracing taken with the proper care, indicated by this instrument, is very legible and easy of interpretation.

A word may be said as to the value of sphygmography. As clinical studies are not within the province of this paper, they will not be detailed; the conclusions that can be drawn from considerable experience will not be out of place, however. Briefly, they are to the effect that in the diagnosis and especially the prognosis of various diseases, it is of extreme value. Especially is this true in the settlement of mooted questions connected with high tension, and the high tension diathesis, and with heart disease in its various forms, particularly in the estimation of cardiac power. In the prognosis of fevers, the sphygmograph is also of value. But withal, this only can be said that its value is great to the individual operator alone. In securing tracings, which can only be done properly after long practice, the personal equation is a most important factor. One can learn his power and know of what value his own control of the instrument is to the result of a proper treatment, which he can utilize in his judgment of the meaning of it. To another this is unknown, hence they can not interpret tracings taken by others. Therefore, the writer believes that to the operator who forms judgments of a case, its power is invaluable and increases with his experience; while, save in the conclusions, the general profession can profit but little.

In conclusion, the writer ventures to express the conviction that the modification of Dr. Mateer will be of inestimable service in popularizing this valuable instrument. He feels that the judgment of the profession will be that the claims which have been presented for it are not too extravagant, and that sphygmography is materially promoted by the addition.

3705 *Powelton Avenue.*

WORK OF WOMEN PHYSICIANS IN ASIA.

BY MARY H. STINSON, M. D.,
Of Norristown, Pa.

(*Continued from page* 617.)

Medical missions are auxiliaries, whose primary object is the salvation of souls. By their reputation for medical and surgical skill, they draw the populace after them, gain their confidence and lead them to say one to another, "You need not be afraid of these missionaries. They are your friends, and have come to do you good." Rev. Mr. Corbell said, "Every attempt to get hold of a new city failed until our medical missionaries first won the confidence of the people by healing or relieving them in cases where the skill of the native physician would not avail." Rev. E. A. Moule attributed his success largely to the hospital work under the care of his associate, Dr. Galt.

Women medical missionaries are sent to break down the hitherto impenetrable barrier of caste. The late Dr. Duff, than whom none better knew the peculiar condition of Hindoo women of the upper classes, when speaking of females having a knowledge of the science and practice of medicine, said, "Would to God we had such an agency ready for work! Soon would India be moved to its inmost recesses."

There are two distinct systems of medicine in India. The Yonani or Greek is practiced by all the Hindoo doctors, called baids, which means medical science or philosophy. They are disciples of the school of Hippocrates, who taught the Greeks their system long before the Christian era. The Yonani has been modified by the older Aryan and the newer Arabic, introduced about 700 years ago by the Mohammedan conquest. These Mohammedan doctors are called "hakoom." "These old systems, full of error and superstition, live and thrive; they are fully believed and wrought into the domestic life of the people."

Women medical missionaries have to contend with both systems, and must have the utmost confidence in their own, and a supreme courage to practice it in the face of much opposition. All confess that the English doctor has marvelous skill in surgery. It is in this that the lady physician will find her widest field of usefulness, and become the greatest blessing to humanity.

During all the past years of missions, the ordained missionaries carried certain medicines when on their circuits, preaching in the villages and out-stations, and by the distribution of which they greatly increased their audiences. Their wives had miniature apothecary shops, and were

obliged not only to medicate their own family, the children of the schools or plianges, but to give medicine to all the sick who applied for it. Thus these mission wives learned the wants of the women and children by whom they were surrounded; also, that these ministrations secured them admission where even their teachers could not gain an entrance. Consequently, they were the first to feel that women physicians were a necessity for the completion of the missionary corps.

Native Christians, English-speaking government officers, merchants, and bankers, had grown somewhat into sympathy with mission projects, as evidenced when there was an effort made to provide a way to educate native women in medicine, by one of these men saying, "It would open the doors of the zenanas as nothing else could. Besides this, you would save thousands of lives that are now sacrificed through the ignorant and bad practice of native doctors."

Another offered to bear half the expenses of educating a class of women in midwifery and medicine, if the government would grant the other half. Application was made. The government officer was in favor of granting the funds, but "there was so much opposition by medical men," and so much inevitable delay, that the gentleman who made the application withdrew the papers, and became responsible himself for the requisite amount. A class of nine women (there were men also) was opened May 1, 1869, under the supervision of Rev. J. S. Humphrey, M. D., in Nynee Tal. After a two years' course of study, four of this class passed a creditable examination, and received certificates of fitness to practice "ordinary surgery and medicine." Early in the same year, the Macedonian cry, "Come over and help us," was heard, in an urgent appeal to the Philadelphia branch of the "Woman's Missionary Society," to send "a full-fledged woman doctor" to the mission in Bareilly, India. Here some girls had been carefully taught, hoping that they might have a chance to study medicine. They had already acquired a fair knowledge of the English language, which was necessary, as there are no words in their vernacular corresponding to technical medical terms.

Miss Clara Swain, M. D., who graduated in March, 1869, in "The Woman's Medical College in Philadelphia," was recommended to and adopted by the "Woman's Union Foreign Missionary Society." But she being a member of the Methodist Episcopal church, and "The Woman's Missionary Society" of that church having just been organized, Dr. Swain was transferred to its care, under which she sailed November 3, 1869, and arrived in Bareilly, India, on January 20, 1870. She was received with much joy by the mission, as a direct answer to their prayers of faith. Prominent intelligent gentlemen of the neighborhood called to welcome her. One, a native who spoke English very well, said, "We need lady physicians in India very much, and I have often spoken of it to my friends, but we did not know where to look for them; as our women are uneducated, they could not study medicine. But it seems the people of the West have thought of us, and helped tc meet our necessity by sending you. Light has again dawned from America." Ah! how much that word America signifies to the oppressed.

Dr. Swain was called immediately to visit women and children of all classes in the community, having had in the first six weeks after her arrival 108 patients. She was at once connected with the orphanage, and on March 1, 1870, commenced teaching medicine to a class of sixteen girls and three married women. They studied well, and thirteen of this class, on April 10, 1873, received from an examining board, two of whom were civil surgeons, "certificates of practice in all ordinary diseases."

In Dr. Swain's first annual report, we find she prescribed at the mission house for 1,225 patients. In the houses of the patients, for 250. And she said, "The way continues to open to our work. We have been called to sixteen different zenanas."

Dispensary and hospital conveniences had become an absolute necessity. But where could suitable grounds be bought, and could the society at home furnish the necessary means? were questions that caused much anxiety. A Mohammedan, Prince of Rampore, forty miles distant, owned an estate of 42 acres, well adapted for hospital purposes, adjoining the mission property. But as he had been decidedly opposed to Christianity, they had no hopes that it could be purchased for any price. However, the Commissioner advised the missionaries to ask his highness upon what terms the property could be bought for a hospital for women and children. This they did in October, 1871. To their astonishment and joy, the Nawab said, "Take it, take it. I give it to you with pleasure for that purpose." This gift was worth at least $15,000. A dispensary building was ready for use by May 10, 1873, and the hospital completed on January 1, 1874, at a cost of $10,350, all of which was furnished by "The Woman's Foreign Missionary Society of the Meth-

odist Episcopal Church" except $350, collected in India.

Dr. Swain was assisted in her medical work by some of those who had received the "certificates," and by native medical students. The dispensary cards were printed in Hindoo, Persian, and Roman Urdu characters. From the 10th of May, 1873, to the 31st of December the same year, 1,600 patients were treated in the new dispensary.

Dr. Swain, when speaking of the sick in the zenanas, said, "My heart is often encouraged by their eagerness to hear and to be taught. They beg for our books, and ask us to come every day." Morning prayer to their false gods and idols is the national custom of both the Hindoo and the Mohammedan.

During 1874, fifty new families called for professional services, and all desired to have a teacher. The number of dispensary patients exceeded 3,000, with 150 outdoor patients.

Dr. Swain's reports of her work read like medical fairy tales. A friend at the mission wrote: "The Lord has had the matter of women medical missions in his own hands from the beginning. Dr. Swain is a grand success."

This minutia of the first four years' work of a woman medical missionary, without any interest of incidents, must serve for the work of all following women medical missionaries in India. All had similar trials and successes, but not to the same extent. No other woman physician in India but Dr. Swain, has taught native women students in medicine.

If time permitted, I should like to tell you of the discussions in the conferences of the missionaries from year to year, so that you might realize how slowly even some of these men grew to know the importance of female education and women's medical missions.

Not until 1872 do we find women in these conferences with papers. But in the conference in Allahabad of that year, Mrs. Winters, the wife of a missionary in Delhi, read a paper on "Female Education," and Miss Brittan one on "Zenana Missions." In the course of her article, Mrs. Winters said: "I would venture to urge the conference not to discuss the question of missions to women, but to spend the time thus saved in silent prayer to God for money, women, and, above all, love."—"I beg the conference with one voice to appeal to America, Germany, and England for aid."—"We ask for the flower of the ladies' colleges, the best nurses from the hospitals, the most devout sisters of mercy from the penitentiaries."—"We ask not an army of zenana teachers; the best missionaries I have known have been Eurasians (Anglo-Indians) and natives. Why should we despise the workers God has put ready to our hands? We want from home a few picked women who will take the higher subjects, and train these nurses, and deepen their spiritual life."—"I left Bengal, after a four years' work, with an intense love for the Bengali women, and with the conviction that with Christianity they would become equal to the best cultivated women in the world."

Miss Brittan, in closing her address, said: "I believe the work among the women in India to be the most important mission work in India. The men had to be educated up to a certain point before they would permit their women to be taught; but now since that has been done, they are anxious to bring their women up to themselves. Depressed, debauched, and degraded as woman is here, she is an almighty power for evil. The influence of the wife is little; that of the mother, unbounded; and as long as that is only for evil, what hope can there be for the youth of India?"

At the same conference, in 1872, there were read two papers on medical missions by Rev. J. S. Humphreys, M. D., and Colin Valentine, Esq., M. D. Female doctors were discussed for the first time in conference in India. In answer to supposed impossibilities, Dr. Humphrey said: "It has been demonstrated beyond a doubt that we can educate the women even, and when educated, they may become useful and efficient practitioners."—"We need something like what is required at home, to make physicians and surgeons"—"in case of both men and women."

Dr. Valentine said: "When I first drew up this scheme for a medical missionary training institution a few years ago, there was not a single female medical missionary in India."—"No provision was made for female students. Now, however, there are female medical missionaries in the country, with a prospect of a large accession to their numbers. I would propose to the conference that the opening of female classes form part of our scheme."

Eleven years after this proposition of Dr. Valentine, we find in a Calcutta newspaper, the *Indian Witness*, of October 27, 1883, the following communication: "As there is a demand for medical Zenana workers in Northern India, it may prove an item of interest to some that the government has opened the Agra Medical School to women. A small class of native women are now in attendance. These are supplied with scholarships from the government; and under certain conditions, private female students may have ac-

cess to all the lectures, and after a course of three years, may be graduated. It should also be known that the Agra Medical Missionary Training Institution, organized through the efforts of Rev. Dr. Colin Valentine, proposes to provide scholarships for native students, male and female, who may wish to pursue a medical course in Agra. Further, the Rev. J. M. Reed, D. D., Secretary to the Missionary Society of the M. E. Church, U. S. A., proposes to be come responsible, as far as necessary, for Methodist native students, and these of either sex, who have been properly recommended may, in connection with this institution, come to Agra to attend the Medical School. We have to thank Mr. H. Dear, of Monghyr, and other gentlemen, for scholarships supporting several lads in attendance at the Medical School. But we urgently need additional funds to be used as scholarships for native Christian students of either sex who may wish to gain a medical education, and for whose maintenance no provision has been made. The new year in the Agra Medical School begins on the 1st of June, 1884."—"It is thought that scholarships for girls should be ten rupees per month, which would pay, not only for their books, clothes, and food, but also for a matron to accompany them to and from the lectures. Scholarships for the boys should be eight rupees monthly."

Rev. Dr. Scudder, M. D., in the conference of 1872, said: "I wish to add my testimony to the great value of medical missions as an evangelizing agency. I come from a medical stock, and therefore feel as if I had a right to speak in the matter. My father labored as missionary physician in India for thirty-five years, and bore testimony to the value of the medical work, regarding it as one of the best means of reaching the people. My own experience, too, extending over a period of seventeen years, is to the same effect."—"I should like to say just a word about this new movement, the introduction of medical ladies into missionary work. I am very glad to see it, and at the same time sorry to refer to the manner in which the medical students in the University of Pennsylvania and in Edinburgh disgraced themselves by their opposition to lady students. It is gratifying to know that this has been overthrown, and that the ladies are taking the place they deserve to occupy."—"They can enter into families where male physicians are forbidden access. I do not mean to say that the latter are entirely excluded; but, on the other hand, there are many cases in which native women would rather die than admit a male physician."

(*To be continued.*)

MEDICAL SOCIETIES.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

(*Continued from page* 622.)

In the cases of *chronic meningeal syphilis* which have come under my observation, most usually after a greater or less continuance of prodromes, such as have been mentioned, epileptic attacks have occurred with a hemiplegia, or a monoplegia, which is almost invariably incomplete, and usually progressive; very frequently diplopia is manifested before the epilepsy, and on careful examination is found to be due to weakness of some of the ocular muscles. Not rarely oculo-motor palsy is an early and pronounced symptom, and a marked paralytic squint is very common. Along with the development of these symptoms, there is almost always distinct failure of the general health, and progressive intellectual deterioration, as shown by loss of memory, failure of the power to fix the attention, mental bewilderment, and, perhaps, aphasia. If the case convalesce under treatment, the amelioration is gradual, the patient traveling slowly up the road he has come down. If the case end fatally, it is usually by a gradual sinking into complete nerve paralysis, or the patient is carried off by an acute inflammatory exacerbation, or, as I saw in one case, amelioration may be rapidly occurring, and a very violent epileptic fit produce a sudden asphyxia. In this form of cerebral syphilis, death from brain-softening around the tumor is not infrequent; but a fatal apoplectic hemorrhage is rare.

The clinical varieties of cerebral meningeal syphilis are so polymorphic and kaleidoscopic, that it is almost impossible to reduce them to order for descriptive purposes. Prof. Fournier separates them into the cephalic, congestive, epileptic, aphasic, mental, and paralytic, but scarcely facilitates description by so doing. Heubner makes the following types:

"1. Psychical disturbances, with epilepsy, incomplete paralysis (seldom of the cranial nerves), and a final comatose condition, usually of short duration.

"2. Genuine apoplectic attacks with succeeding hemiplegia, in connection with peculiar somnolent conditions, occurring in often-repeated episodes; frequently phenomena of unilateral irritation, and generally at the same time paralyses of the cerebral nerves.

"3. Course of the cerebral disease similar to paralytica dementia."

In regard to these types, the latter seems to me clear and well-defined, but contains those cases which I shall discuss under the head of cortical disease.

Meningeal syphilis as seen in this country does not conform rigidly with the other asserted types, although there is this much of agreement, that when the epilepsy is pronounced, the basal cranial nerves are not usually paralyzed; the reason of this being that epilepsy is especially produced when the gummatous change is in the ventricles or on the upper cortex. In basal affections, the epileptoid spells, if they occur at all, are usually

of the form of petit mal; but this rule is general, not absolute. The apoplectic somnolent form of cerebral syphilis, for some reason, is rare in this city; and it seems necessary to add to those of Prof. Heubner's, a fourth type to which a large proportion of our cases conform. This type I would characterize as follows:

4. Psychical disturbance without complete epileptic convulsions, associated with palsy of the basal nerves, and often with partial hemiplegia.

The most satisfactory way of approaching this subject is, however, to study the important symptoms in severalty, rather than to attempt to group them so as to make typical, recognizable varieties of the disease; and this method I shall here adopt.

Headache is the most constant and usually the earliest symptom of meningeal syphilis; but it may be absent, especially when the lesion is located in the reflexions of the meninges which dip into the ventricles, or when the basal gumma is small and not surrounded with much inflammation. The length of time it may continue without the developent of other distinct symptoms is remarkable. In one case (Book Y, p. 88, 1879), at the University Dispensary, the patient affirmed that he had had it for four years before other causes of complaint appeared. It sometimes disappears when other manifestations develop. It varies almost indefinitely in its type, but is, except in very rare cases, at least so far paroxysmal as to be subject to pronounced exacerbations. In most instances it is entirely paroxysmal; and a curious circumstance is, that very often these paroxysms may occur only at long intervals; such distant paroxysms are usually very severe, and are often accompanied by dizziness, sick stomach, partial unconsciousness, or even by more marked congestive symptoms. The pain may seem to fill the whole cranium, may be located in a cerebral region, or fixed in a very limited spot. Heubner asserts that when this headache can be localized, it is generally made distinctly worse by pressure at certain points, but my own experience is hardly in accord with this. Any such soreness plainly cannot directly depend upon the cerebral lesion, but must be a reflex phenomenon, or due to a neuritis. According to my own experience, localized soreness indicates an affection of the bone or of its periosteum. In many cases, especially when the headache is persistent, there are distinct nocturnal exacerbations.

It will be seen that there is nothing absolutely characteristic in the headache of cerebral syphilis; but excessive persistency, apparent causelessness, and a tendency to nocturnal exacerbation, should in any cephalalgia excite suspicion of a specific origin; a suspicion which is always to be increased by the occurrence of slight spells of giddiness, or by delirious mental wandering accompanying the paroxysms of pain. When an acute inflammatory attack supervenes upon a specific meningeal disease, it is usually ushered in by a headache of intolerable severity.

When the headache in any case is habitually very constant and severe, the disease is probably in the dura mater or periosteum; and this probability is much increased if the pain be local and augmented by firm, hard pressure upon the skull over the seat of the pain.

Disorders of Sleep.—There are two antagonistic disorders of sleep, either of which may occur in cerebral syphilis, but which have only been present in a small proportion of the cases that I have seen. Insomnia is more apt to be troublesome in the prodromic than in the later stages, and is only of significance when combined with other more characteristic symptoms. A peculiar somnolence is of much more determinate import. This may occur in non-specific lepto-meningitis, and in states of altered brain nutrition from senile or other degenerations of the walls of the cerebral vessels, and is, therefore, not pathognomonic of cerebral syphilis, yet of all the single phenomena of the latter disease it is the most characteristic. Its absence is of no import in the theory of an individual case.

As I have seen it, it occurs in two forms: In the one variety the patient sits all day long or lies in bed in a state of semi-stupor, indifferent to everything, but capable of being aroused, answering questions slowly, imperfectly, and without complaint, but in an instant dropping off again into his quietude. In the other variety, the sufferer may still be able to work, but often falls asleep while at his tasks, and especially towards evening has an irresistible desire to slumber, which leads him to pass, it may be, half of his time in sleep. This state of partial sleep may precede that of the more continuous stupor, or may pass off when an attack of hemiplegia seems to divert the symptoms. The mental phenomena in the more severe cases of somnolency are peculiar. The patient can be aroused, indeed in many instances he exists in a state of torpor rather than of sleep; when stirred up he thinks with extreme slowness, and may appear to have a form of aphasia; yet, at intervals he may be endowed with a peculiar automatic activity, especially at night. Getting out of bed; wandering aimlessly and seemingly without knowledge of where he is, and unable to find his own bed; passing his excretions in a corner of the room, or in other similar place, not because he is unable to control his bladder and bowels, but because he believes that he is in a proper place for such act—he seems a restless automaton, rather than a man.

Apathy and indifference are the characteristics of this state, and yet the patient will sometimes show excessive irritabllity when aroused, and will at other periods complain bitterly of pain in his head, or will groan as though suffering severely in the midst of his stupor, at a time, too, when he is not able to recognize the seat of the pain. I have seen a man with a vacant apathetic face, almost complete aphasia, persistent heaviness and stupor, arouse himself when the stir in the ward told him that the attending physician was present, and come forward in a dazed, highly pathetic manner, by signs and broken utterance begging for something to relieve his head. Heubner speaks of cases in which the irritability was such that the patient fought vigorously when aroused; this I have not seen.

This somnolent condition may last many weeks. Dr. T. Buzzard (*Clinical Lectures on Dis. Nerv. Syst.*, London, 1882,) details the case of a man who, after a specific hemiplegia, lay silent and somnolent for a month, and yet finally recovered so completely as to win a rowing match on the Thames.

In its excessive development, syphilitic stupor puts on the symptoms of advanced brain softening, to which it is indeed often due. Of the two cases with fatal result of which I have notes, one at the autopsy was found to have symmetrical purulent breaking-down of the anterior cerebral lobes; the other, softening of the right frontal and temporal lobes due to the pressure of a gummatous tumor, and ending in a fatal apoplexy.

This close connection with cerebral softening explains the clinical fact that apoplectic hemorrhage is very apt to end the life in these cases of somnolent syphilis. Dr. Buzzard's case given above, and others which might be cited, prove, however, that a prolonged deep stupor in persons suffering from cerebral syphilis does not prove the existence of extensive brain softening, and is not incompatible with subsequent complete recovery. As an element of prognosis, it is of serious but not of fatal import.

Paralysis.—When it is remembered that a syphilitic exudation may appear at almost any position in the brain, that spots of encephalic softening are not a rare result of the infection, that syphilitic disease is a common cause of cerebral hemorrhage—it is plain that a specific palsy may be of any conceivable variety, and affect either the sensory, motor, or intellectual sphere. The mode of onset is as various as the character of the palsy. The attack may be instantaneous, sudden, or gradual. The gradual development of the syphilitic gumma would lead us, *à priori*, to expect an equally gradual development of the palsy; but experience shows that in a large proportion of the cases the palsy develops suddenly, with or without the occurrence of an apoplectic or epileptic fit. Under these circumstances it will be usually noted that the resulting palsy is incomplete; in rare instances it may be at its worst when the patient awakes from the apoplectic seizure, but mostly it progressively increases for a few hours, and then becomes stationary. These sudden partial palsies probably result from an intense congestion around the seat of disease, or from stoppage of the circulation in the same locality; but whatever their mechanism may be, it is important to distinguish them from palsies which are due to hemorrhage. I believe this can usually be done by noting the degree of paralysis.

A suddenly developed, *complete* hemiplegia, or other paralysis, may be considered as in all probability either hemorrhagic or produced by a thrombosis so large that the results will be disorganization of the brain substance, and a future no more hopeful than that of a clot. On the other hand, an *incomplete* palsy may be rationally believed to be due to pressure or other removable cause, and this belief is much strengthened by a gradual development. The bearing of these facts upon prognosis it is scarcely necessary to point out.

Although the gummæ may develop at almost any point, they especially affect the base of the brain, and are prone to involve the nerves which issue from it. Morbid exudations, not tubercular nor syphilitic, are very rare in this region. Hence a rapidly but not abruptly appearing strabismus, ptosis, dilated pupil, or any paralytic eye symptom in the adult, is usually of syphilitic nature. Syphilitic facial palsy is not so frequent, whilst paralyses of the nerve from rheumatic and other inflammation within its bony canal are very common. Paralysis of the facial may therefore be specific, but it is of no diagnostic value. Since syphilitic palsies about the head are in most instances due to pressure upon the nerve trunks, the electrical reactions of degeneration are present in the affected muscles.

There is one peculiarity about specific palsies which has already been alluded to as frequently present—namely, a temporary, transient, fugitive, varying character and seat. Thus an arm may be weak to-day, strong to-morrow, and the next day feeble again; or the recovered arm may retain its power, and a leg fail in its stead. These transient palsies are much more apt to involve large than small brain territories. The explanation of their largeness, fugitiveness, and incompleteness, is that they are not directly due to clots or other structural changes, but to congestions of the brain tissues in the neighborhood of gummatous exudations. It is easily seen why a squint will remain when the accompanying monoplegia disappears.

Motor palsies are more frequent than sensory affections in syphilis, but hemianæsthesia, localized anæsthetic tracts, indeed any form of sensory paralysis, may occur. Numbness, formications, all varieties of paræsthesia are frequently felt in the face, body, or extremities. Violent peripheral neuralgic pains are rare, and generally when present denote neuritis. Prof. Huguenin, however, reports (*Schwiez. Corr. Blat.*, 1875,) a case in which a severe trigeminal anæsthesia dolorosa had existed during life, as the only cerebral symptom, and death occurring from lung disease, a small gumma was found on the sella turcica pressing upon the Gasserian ganglion.

The special senses are liable to suffer from the invasion of their territories by cerebral syphilis, and the resulting palsies follow courses and have clinical histories parallel to those of the motor sphere. The onset may be sudden or gradual, the result temporary or permanent. Dr. Chas. Mauriac (*loc. cit.*, p. 31) reports a case in which the patient was frequently seized with sudden attacks of severe frontal pain and complete blindness, lasting from a quarter to half an hour; at other times the same patient had spells of aphasia lasting only for one or two minutes. In a case still under my care with unmistakable signs of cerebral syphilis, the man was suddenly and unaccountably seized with complete deafness, which after some days disappeared in the course of a few hours. Like other syphilitic palsies, therefore, paralyses of special senses may come on suddenly or gradually, and may occur paroxysmally.

Among the palsies of cerebral syphilis must be ranked aphasia. An examination of recorded cases shows that it is subject to vagaries and laws similar to those connected with other specific cerebral palsies. It is usually a symptom of advanced disease, but may certainly develop as one of the first evidences of cerebral syphilis.

Coming on after an apoplectic or epileptic fit, it may be complete or incomplete: owing to the smallness of the centre involved, and the ease with which its function is held in abeyance, a total loss of word thought is not so decisive as to the existence of cerebral hemorrhage as is a total

motor palsy. Like hemiplegia or monoplegia, specific aphasia is sometimes transitory and paroxysmal. Dr. Buzzard (*loc. cit.*, p. 81) records several such cases. Dr. Charles Mauriac (*Aphasie et Hemiplégie droite Syphilit.*, Paris, 1877,) details a very curious case in which a patient after long suffering from headache was seized by a sudden loss of power in the right hand and fingers, lasting about ten minutes only, but recurring many times a day. After this had continued for some alytic and were accompanied by loss of power of finding words, the height of the crises in the palsy and aphasia being simultaneously reached. For a whole month these attacks occurred five or six times a day, without other symptoms except headache, and then the patient became persistently paralytic and aphasic, but finally recovered.

To describe the different forms of specific aphasia and their mechanism of production, would be to enter upon a discussion of aphasia itself, a discussion out of place here. Suffice to say that every conceivable form of the disorder may be induced by syphilis.

Owing to the centres of speech being situated in the cortical portion of the brain, aphasia in cerebral syphilis is very frequently associated with epilepsy. Of course, right-sided palsy and aphasia are united in syphilitic as in other disorders. If, however, the statistics given by M. Tanowsky (*L'Aphasie Syphilitique*) be reliable, syphilitic aphasia is associated with left-sided hemiplegia in a most extraordinarily large proportion. Thus in 53 cases collected by Mr. Tanowsky, 18 times was there right-sided hemiplegia, and 14 times left-sided hemiplegia, the other cases being not at all hemiplegic. Judging from the autopsy on a case reported in Mauriac's brochure, this concurrence of left-sided paralysis and aphasia depends partly upon the great frequency of multiple brain lesions in syphilis, and partly upon the habitual involvement of large territories of the gray matter secondarily to diseased membrane. An important practical deduction is that the conjoint existence of left hemiplegia, and aphasia is almost diagnostic of cerebral syphilis.

(*To be Continued.*)

EDITORIAL DEPARTMENT.

PERISCOPE.

An Operation for Hallux Valgus.

Dr. Arthur E. Barker thus writes in the *Lancet*, April 12, 1884:

The deformity hallux valgus is one for which it will probably be admitted a cutting operation is rarely demanded. In the first place, the condition being one due in almost every case to ill-fitting boots, which force the great toe out of the line of its metatarsal bone into strong abduction, it is possible by proper attention to the shoeing of the patient, by methodical manipulation of the faulty toe, and by placing pads between the latter and its neighbors, to bring it in most cases into a fairly comfortable position once more. Still every surgeon must meet from time to time with cases of this deformity which baffle all ordinary endeavors to bring about even a tolerable state of things, and where the great toe lying crosswise, either under or over its fellow, gives rise to such inconvenience, if not actual suffering, as practically to cripple the individual so affected. Under these circumstances patients are willing to undergo any treatment in order to be relieved, and will even urge the surgeon to amputate the offending member, which is interfering with all comfort in progression.

The following case will illustrate remarkably well the evils of this condition, and will serve also for the demonstration of a simple operation which was practiced with perfect success for its cure.

X——, aged nineteen, was brought to me as an out-patient in November, 1882. He complained much of being crippled by the deformity of his toes. I found both feet to present the deformity in question acutely, but most marked on the right side, where the nail of the great toe lay under its fellow, its matrix being in a state of suppuration from the pressure and irritation, and the parts exquisitely tender. Various measures had been tried before I saw the patient to relieve him, attention being particularly directed to the inflamed matrix and ingrown nail. I did not anticipate much difficulty in relieving the patient, and treated him by cutting out the imbedded portion of nail and dressing the ulcerating surfaces with antiseptic materials placed thickly between the toes. This, however, proved of no permanent benefit to the patient, for on trying to walk the great toe always reassumed its vicious position under that next it, and the ulceration commenced as before. Finally, after a long treatment, the patient's father and a friend came to me and urged me to take stronger measures, and if necessary remove the toe, as the youth had been thrown out of work and was unable to take any exercise for a long time. I was of course averse to amputation of the member, though it was only an encumbrance, and began to review for the students present all the measures which have from time to time been resorted to for improving the deformity. In doing so I was dwelling on the question of excision of the metatarsal phalangeal joint recommended by some, when one of our students, Mr. C. Hoar, asked me if the condition was ever relieved by osteotomy of the metatarsal bone, and straightening of the toe thus without interfering with the joint at all, as he had often seen me operate for genu valgum. I told him that I did not think it had been done hitherto, but that the idea seemed such a good one that we should put it in practice in this case at once. The patient and his father accepting the proposal to do so with great readiness, I performed the following simple operation with the strictest Listerian antiseptic

precautions. Having first made an incison through the soft parts about an inch long, on the inner aspect of the metatarsal bone, above its head, I cut out with a chisel a small wedge-shaped piece of bone from the shaft just above the head, the base of the wedge being on the inner surface of the bone, and the apex at a point nearly through to the other side. Then, by forcibly abducting the great toe, I snapped the uncut remainder of the metatarsal bone, and brought the whole member into a straight line. In this position it was easily retained by a narrow splint along the inner border of the foot. The wound was dressed antiseptically, and the patient was allowed to go home at once. But little remains to be said about the case. The wound was left undisturbed for ten days, and was then found practically healed and without suppuration. The splint was, however, left on for a few days longer, after which, as the bone had united in its straight position, the patient was allowed to return to work, which he was soon engaged in as actively as ever. I have seen him several times since at intervals (yesterday, Feb. 18th, 1884, for the last time, *i. e.*, over two years after operation), and the toe is almost quite straight, although a little bent by a bad-fitting boot since worn. He is quite relieved of all the troubles incidental to this deformity.

It will be observed from the above short description, that this simple operation is almost the same as that we are in the habit of performing for genu valgum. Here, however, I thought it better to remove a small wedge of bone, instead of simply dividing the part transversely, as in the case of the knee. I imagined there might otherwise be some difficulty in bringing the parts into position, remembering the short leverage of the toe as compared with that of the tibia. The course of the healing process was as completely satisfactory as those osteotomies usually are under the antiseptic treatment of wounds. It was without suppuration, pain, or fever. The toe has been a little stiff since, as might be expected; but the patient does not wish any forcible flexion of it, as the stiffness gives him no inconvenience.

I have purposely avoided going into minute details of this operation. Its principles and practice must be perfectly clear to any one familiar with osteotomy for genu valgum, now so commonly practiced. It is quite simple and free from risk, if performed with strict antiseptic precautions: and though not often called for, still I cannot help thinking that there is a useful place for it in surgery.

This little operation may have been done before, but I cannot find any record of such a procedure. If it be original in this case, the merit of the suggestion lies with one of our students at University College Hospital.

The German Cholera Commission.

The *Brit. Med. Jour.*, April 12, 1884, furnishes us the following in reference to Dr. Koch's latest report:

The "Seventh Report of the German Cholera Commission," dated Calcutta, March 4, recently published in Berlin, is a document of no small importance, as it supplies evidence on the question of the mode of origin of epidemics, and the method of propagation.

The evidence distinctly supports the theory that cholera is spread by a water-borne contagion. The report deals chiefly with the occurrence of small local epidemics of cholera in the neighborhood of "tanks." These "tanks," which are scattered over the whole country in vast numbers, are, in reality, small ponds, often in marshy ground, surrounded by a few huts. The inhabitants use the water of the tank for every purpose, washing, bathing, and drinking, and latrines of a very primitive design are frequently erected on the banks and drain into the "tank." The water of these tanks is, of course, under these circumstances, highly charged with foul organic matter; and it is said to be within the experience of all who have seen much of cholera, that local epidemics occur with considerable frequencey in the neighborhood of these tanks. The Sanitary Commissioner of the government, having been applied to by Dr. Koch, was able in the end of February to direct his attention to Saheb Bagan, a suburb of Calcutta, where such a local epidemic was in progress; it was entirely limited to the inhabitants, about one hundred in number, of huts built around the pond. Seventeen deaths from cholera occurred among these hundred persons, though during the same period, in the other parts of the police district in which the tank is situated, no cases of cholera were reported. It was ascertained that the water of the "tank" had served the inhabitants for purposes of bathing, washing, and drinking, and that the linen of the first fatal case of cholera, smirched with the dejections, was washed in this "tank." Samples of water were taken from different parts of the pond and examined by the method of cultivation on gelatine. It was found that the first samples were rather rich in the cholera-bacillus, whereas of those obtained at a later period, and near the termination of the epidemic, the characteristic bacillus was only found, in very small numbers, in one sample taken from a very dirty part of the pond. This was the only instance which could be examined, but Dr. Koch contends that it affords strong evidence of one of the ways by which the poison of cholera finds its way into the human body.

The examination of cholera-dejections, and of the bodies of persons who had died of cholera, had been continued by the Commission; and the results obtained had confirmed, without extending or otherwise modifying, those previously published.

Experiments have been made by the Commission to ascertain the influence of disinfectants, such as corrosive sublimate and carbolic acid, on the growth of the bacillus in culture fluids, and also the results of cultivation in an atmosphere of carbonic acid gas, and in a closed chamber.

No definite results have as yet been obtained with regard to the question of the conditions under which the bacillus can retain its vitality. It does not seem to be able to preserve its vitality when dried, but if kept moist it can be preserved for a long time. In liquids it can maintain its vitality for several weeks, and Dr. Koch thinks that all the evidence tends to show that the infection can only be introduced into the human body in a moist state.

THE
Medical and Surgical Reporter,
A WEEKLY JOURNAL,
ISSUED EVERY SATURDAY.

D. G. BRINTON, M. D.,
JOSEPH F. EDWARDS, M. D., } EDITORS.

The terms of subscription to the serial publications of this office are as follows, payable in advance:—

Med. and Surg. Reporter (weekly), a year,	**$5.00**
Quarterly Compendium of Med. Science, -	**2.50**
Reporter and Compendium. - - - -	**6.00**
Physician's Daily Pocket Record, - -	**1.50**
Reporter and Pocket Record, - - - -	**6.25**
Reporter, Comp. and Pocket Record, - -	**7.00**

For advertising terms address the office.

Marriages, Deaths, and Personals are inserted free of charge.

All letters should be addressed, and all checks and postal orders drawn to order of

D. G. BRINTON, M. D.,
115 South Seventh Street,
PHILADELPHIA, PA.

AN OBSTETRIC CASE

(Price, $15.00),

OR

AN ELECTRIC BATTERY

(Price, $25.00),

AS PREMIUMS.

Any subscriber to the REPORTER who will send us before the 1st of July the names of *three* new subscribers with their yearly subscriptions ($15) or *five* new subscribers with $25.00, will receive, for the three, an Obstetric Case complete, and for the five, an Electric Medical Battery complete. They are new, of the best make, and of guaranteed excellence. The new subscribers will receive the REPORTER *free* from the date of the remittance until July 1st next.

Address DR. D. G. BRINTON,
115 South Seventh Street,
PHILADELPHIA, PA.

THE NEW FEBRIFUGE—KAIRIN.

The reports of the remarkable antipyretic effect of kairin continue to augment. Most observers seem to agree that it is best to begin in adults with a dose of about 12½ grains, to repeat this two hours later, then to administer 9 grains every two to three hours, until the desired effect—decrease of temperature—has been obtained, when a smaller dose, about 5 grains, employed every three hours, usually suffices to keep down the temperature. But at the least indication of the temperature falling below normal, the remedy must either be omitted or given in small doses and at very long intervals, say 3 grains every twelve hours. Should, however, the temperature nevertheless again ascend, the same course as described must be gone through anew.

At a recent meeting of the society for gynæcology in Leipsic (*Allgem. Med. Centr. Zeit.*, 1884, 1), Dr. Hennig reported on the effect of kairin in parturient women and in children. He had employed the new drug in three cases of women in childbirth, dangerously ill. Patient had been confined to bed for six weeks. She suffered, aside from the puerperal fever, from a bed-sore of the size of a child's hand, and penetrating to the periosteum of the sacrum. The scond patient became attacked in the second week of childbed by peri- and para-metritis dextra, perforating later into the rectum; chronic pneumonia also became added; there was inclination to tetanus; and frequent vomiting, besides anæmia in a high degree, were other complicating phenomena. The third evinced typhoid symptoms and diarrhœa lasting three days. The children were suffering, one from scarlatina; one from diphtheria, with high fever; and one with laryngeal stenosis, necessitating tracheotomy.

In all these five cases the kairin was administered after all the well-known and usually considered effective febrifuges (quinine, salicylate of sodium, application of cold, and especially baths), had proven themselves incapable of reducing the fever from its height (41.6° to 42.4° C.). The decrease of temperature promptly took place in all five cases, and amounted in the adults to 2°

C., and in the children (æt. 2 to 3) 1° to 1.8° C.

The antipyretic effect of kairin has been demonstrated not only to come up to the expectations of its discoverer, but also to surpass them; for all these five persons, in whom the prognoses had been so grave as to induce the physicians attending them, ere Hennig saw them, to consider them beyond all hope, and still they were free from fever, the operated boy after recovering from a grave form of bronchitis. Intense (black-green) discoloration of the kairin urine was observed only in two of the women; the third reported as the next visible effect of the kairin, cessation of all pains.

News and Miscellany.

Pennsylvania State Medical Society.

(*Concluded from page* 639.)

Then followed the Address in Obstetrics, by Dr. Jacob Price, of West Chester, which began with a reference to the remarkable rapidity with which the present advanced condition of obstetrics has been reached. "A hundred years ago it was not recognized in the curriculum of the medical college. The first medical school in this country, established in Philadelphia in 1765, contained no provision for the study of obstetrics. After some time it was attached to the chair of anatomy, and thereby fortunately came into the hands of Dr. Wm. Shippen, who by his previous careful training under Smellie and Wm. Hunter, was peculiarly fitted to teach this new branch of medical science and extend its interest. Aided by Drs. Bond, Duffield, and James, Dr. Shippen succeeded in establishing a lying-in hospital, with clinical lectures upon midwifery in connection with it."

"It was not, however, until 1810 that the chair of obstetrics in the University of Pennsylvania was separated from that of anatomy; and even at this date the ban of the profession rested so heavily upon it that not until 1813 was attendance upon the obstetrical course made a requisite for graduation."

Reference is made to the advanced condition of obstetrics and gynecology, as shown by the translators of the works of Oribasius and Œtius, presented by Prof. Maughs, of St. Louis, at the meeting of the American Medical Association in 1883. The pernicious vomiting of pregnancy is a trouble to which Dr. Price seems to have given special attention; and as his points are somewhat new, and the results in treatment most satisfactory, we give his discussion of it in full.

Perhaps the first trouble for which the pregnant female seeks the counsel of her medical adviser is the sick stomach that usually attends the early months of utero-gestation. This, by the laity and by too many physicians, is looked upon as a trifling affair, and receives but little attention. Fortunately in the vast majority of cases it is not serious, and yields to remedies addressed to the stomach itself. But sometimes all such treatment fails to give relief—the symptoms grow steadily worse. It is no longer a morning sickness. Nearly all food is rejected—emaciation and loss of strength steadily progress. The nervous symptoms deepen—evidences of inanition become pressing. The routine practice of the books fails to stem the downward tendency. The induction of premature labor, with all its dangers, is taught and accepted as a necessity to avert death from inanition. Early in my practice two such cases came under my notice, one of them in my own practice. Both proved fatal—my own case after the induction of abortion. The study of the subject induced by these unfortunate cases, established the fact that not one of the systematic works upon obstetrics to which I could gain access, gave any well-defined views as to the pathology of this most serious malady, or any treatment except palliative medication, evidently of a routine character, all of which, in these grave and protracted cases, experience proved totally unreliable. Step by step I reached the conclusion that in these unmanageable cases of vomiting during pregnancy—"pernicious vomiting," as it has recently been designated—there was present congestion or inflammation of the uterine cervix. In no case did examination fail to disclose the presence of local disease of this character, and treatment based upon this view proved eminently satisfactory.

In a paper upon the subject which I had the honor to read at the meeting of this society in Lancaster, in May, 1881, I embodied these conclusions in regard to the pathological condition present in this disease—detailed the steps of treatment I had found prompt in affording relief, and reported several illustrative cases. My paper was severely attacked, upon theoretical grounds alone, but I had the satisfaction of finding it warmly defended and thoroughly sustained by the practical men present, those whose daily work led them to the bedside of the sick and suffering.

Since 1881 five cases of "pernicious vomiting" have come under my own notice, and several more under the care of physicians with whom I have corresponded, and in no one has treatment, local and general, based upon the foregoing pathological views, failed to afford relief. I will give briefly three cases of my own, and four in the practice of other physicians.

The first was in one of the patients named in my former paper. A subsequent pregnancy was attended by the same extreme symptoms. Remembering the relief in her former trouble, she sought treatment before the emaciation and nervous prostration had made much progress. She soon recovered. I will here state the points of treatment: Relief of constipation, if present, by effervescing saline; rest in bed; emollient vaginal injections, and applications at intervals of three days of a solution of iodine, crystalized carbolic acid and tannin, each two drachms, dissolved by heat in an ounce of pure glycerine: in some cases I add morphia and atropia; a vaginal tampon of absorbent cotton saturated with pure glycerine, and followed by a dry one, is placed at each treatment. Usually not more than three or four of these applications are required.

The second case was the wife of a prominent physician of this city. I will let her husband give the case in his own words:

"My wife was operated upon for lacerated cervix, by Dr. A. H. Smith, in April, 1883. Her second pregnancy began in June following. In July extreme and incessant vomiting came on. All ordinary, in fact all known remedies, were tried, but nothing proved of any avail. Toward the latter part of August you took charge of the case, at which time I considered her condition very critical, and had grave doubts of the possibility of carrying her through the gestation safely. The speculum revealed a generally congested and livid appearance of the whole uterine neck, with leucorrhœal discharge, coming evidently from the cavity of the cervix. A careful application of your modified Battey's solution was made to the os and neck of the uterus. Within twelve hours decided relief was manifested. These applications were repeated three times a week for three weeks, by which time her condition was so much improved that they were discontinued, except at intervals of some weeks, when there was slight return of sickness. Labor set in March 23. The first stage slow; second very rapid; recovery satisfactory; but recent examination discloses at least a partial reproduction of the laceration."

In commenting upon this case, I may say that the partial return of sickness was no doubt due to the too early discontinuance of the regular tri-weekly application. A private letter from the patient expressed in most grateful terms the prompt and complete relief she derived from the treatment.

My third case was also the wife of a physician. He wrote me that his wife, then in the fourth month of gestation, was extremely ill from uncontrollable vomiting. That in three former pregnancies she had suffered from sickness that resisted the usual remedies, but she was so much more ill now, that with his former experience of the inefficiency of medication he feared for her life, and was disposed to think abortion would soon be an absolute necessity. I suggested the treatment already described.

In three weeks he informed me that his wife had been entirely relieved by the rest and injections alone, and that she was attending to her household duties with entire comfort. I saw her three months later, quite well, and enthusiastic over the relief she had received from the simple yet most efficient treatment.

Dr. P. informed me that some weeks before writing me, in view of the necessity for removing the contents of the uterus, he had consulted a prominent teacher in obstetrics, and had received no suggestions beyond the routine medication of the books, all of which he had tried in this and her previous pregnancies without any good result. I mention this to illustrate how little thought and study this most serious and at times dangerous malady has received at the hands of those to whom we look as authority in all that pertains to obstetrics.

My neighbor, Dr. C. E. Woodward, has given me the notes of two cases, one aged 30—the fourth pregnancy in five years. He saw her first April 14, 1883, two months pregnant. There was constant nausea and vomiting, great anemia, and nervous depression amounting to melancholia. She had profuse leucorrhœa and painful micturition. A vaginal examination disclosed a lacerated cervix. The os uteri was swollen, red, and sensitive to the touch, and with a profuse acrid discharge. I painted the os and cervix freely with a mixture of tr. of iodine, glycerine, and carbolic acid, morphia and atropia, and left a vaginal pad of cotton saturated with glycerine. These applications were made at intervals of four days for about a month, by which time the discharge had ceased, the evidence of congestion and inflammation of the os and cervix had passed away, and the sick stomach was entirely relieved. Two months later the complaint returned, and with it the evidence of local disease. A few applications removed the latter, and again the vomiting and other distressing symptoms disappeared.

Dr. Woodward's second case, a primipara. The vomiting came on early and resisted all medication. By the third month she was very much emaciated, and the prostration extreme. A vaginal examination disclosed a swollen and congested cervix, tender to the touch, which seemed immediately to increase the nausea. Applications were made as in the former case. A favorable impression was apparent after the first application, and by the fifth the relief was complete. There was no medication after the local treatment was begun.

Dr. Massey, also of West Chester, reports a case in which, after three months of sick stomach, resisting usual remedies, the use of warm vaginal injections, painting the cervix with comp. tr. of iodine and glycerine, and the vaginal pledget of cotton, saturated with pure glycerine, was followed by complete relief. In this case there was retroflexion, which was corrected by one of Smith's pessaries, the use of which was continued until the seventh month of gestation.

Dr. Boardman Reed, of Atlantic City, N. J., has kindly sent me the following case, which I give in his own words: "A lady pregnant for the third time complained of almost unremitting nausea and vomiting. She said that in her previous pregnancies she had suffered for months in a similar manner, and that medicines did her no good. I tried various remedies for her without avail, until about the end of the second month, when her sufferings were so great that she threatened to have an abortion produced. Emboldened by the experience of Dr. Price, as recorded in his paper on this subject read before the Medical Society of the State of Pennsylvania in 1881, I applied the comp. tr. iodine freely to the os and cervix uteri, which upon examination was found to be congested and tender. The relief from this distressing sickness was immediate and decided. A second application, made a week later, so far cured the trouble that the patient made very little complaint thereafter. No pain or bleeding followed the application."

Gentlemen, my apology for referring so much in detail to this subject, "the pernicious vomiting of pregnancy," is to be found in the conviction that has been forced upon me after long and careful study of it—that no disease so important in its bearing upon the comfort and safety of the patient has been so little studied, is so unsettled in its pathology, and the treatment of which has been so unsatisfactory. That it is often serious all must

admit. Guéniot (as quoted by Playfair) collected 118 cases of the graver form of the disease, out of which 46 died, and out of 72 that recovered, in 42 the symptoms ceased only when abortion either spontaneous or induced had occurred. That it has not received from systematic writers on obstetrics the study its importance demands, is very evident. A few paragraphs, reproducing a routine treatment, that repeated experience has shown inefficient, is all the space devoted to it by some claiming to be comprehensive.

Playfair alone, of all I have been able to consult, recognizes fully the gravity of the class of cases I have been discussing, and admits the unsatisfactory character of our knowledge, both of its pathology and treatment. He, as well as Leishman and Lusk, speaks of inflammation as a possible cause in some cases, but lays no stress whatever upon this view. I. Henry Bennett is the only author I have found who distinctly refers to "inflammatory ulceration of the cervix uteri" as a possible cause of obstinate vomiting in pregnancy.

A recent French writer, Dr. Suturgin, in "Archives de Tocologie," after elaborate study, draws the following conclusions: "That the symptoms are very analogous to those of inanition, which explains the decreased urinary secretion, and the presence of albumen and cylinders in the urine. That death takes place, either from exhaustion or from intercurrent puerperal disease or from diseases that have no direct relation to pregnancy, that the nature of the affection is still unknown, and finally, if therapeutic means fail (and none are pointed out) premature delivery must be resorted to."

Dr. Grailly Hewitt advanced the theory that the disease in question depends upon flexion of the uterus, producing irritation of the nerves at the seat of flexion and consequent sympathetic vomiting, but it received little favor when discussed by the London Obstetrical Society. My own observation disproves it entirely. I have met with several cases of flexion of uterus during the early months of pregnancy without serious sickness, and in no case of "pernicious vomiting" have I found it present. The generally received explanation is that the vomiting is due to the stretching and consequent irritation of the uterine nerves by the growing ovum. This is probably true so far as the slight morning sickness is concerned, but is totally inadequate to explain the grave form of the disease.

Horwitz, of St. Petersburg, has given, very recently, an elaborate paper upon the uncontrollable vomiting of pregnancy. In common with Guéniot, who adopts the term, "Vomitus Gravidorum Pernicoses," he draws the distinction sharply between this form of disease and the morning sickness of the early weeks of pregnancy. The former begins most frequently between the tenth and eleventh weeks. He discusses the various explanatory theories that have been proposed, but declares that none are satisfactory. The prognosis, he thinks, depends much upon the epoch of pregnancy in which the trouble appears. The nearer to the beginning the worse the prognosis, especially in the case of primaparæ. He quotes Joulin as giving the mortality at 44 per cent. As to treatment, he offers nothing new. In dangerous cases, in which life is threatened, artificial abortion becomes a necessity.

In concluding this subject, I am glad not to leave you with the unsettled and discouraging views which these distinguished writers have reached, but to state distinctly as the result of careful study of the disease, now extending over a period of many years, that the "pernicious vomiting of pregnancy" is dependent in a vast majority of cases upon congestion and inflammation of the lower segment of the uterus; and I here wish to assert so emphatically as to arrest the attention of every physician now present, that I know of no disease of equal gravity that so surely yields to established rules of treatment as this one does to treatment based upon the view of a congestive or inflammatory causation, viz., rest in bed, emollient and mildly astringent vaginal injections, the tepid sitz bath, and especially, in extreme cases, the topical application of Battey's or a similar sedative lotion to the uterine cervix. I am sure that no one who carefully and intelligently carries out this plan of treatment will fail to bring relief in the most obstinate case.

In discussing the treatment of cases of abortion, the address takes strong ground against *immediate* instrumental interference to remove the secundines, and reprobates the practice of some of the younger writers, who would make every miscarriage an excuse for scooping out the cavity of the uterus. "Such active interference is uncalled for and mischievous in a vast majority of these cases." The use of vaginal or cervical tampon (disinfected) will in most cases be followed by the almost painless and usually safe expulsion of all the contents of the uterus, and thus the dangerous element of traumaticism avoided. "Yet when operative means really become necessary," Dr. Price says, "there is no question that the smooth wire curette of Thomas, or the larger one described by Mundé, is the safest instrument that can be used. It is far less painful than the finger, more efficient, and if used carefully is less liable to produce injury."

The potency of uterine flexion in causing abortion in the third month is referred to, and in the writer's opinion is so frequent in its operation, that a vaginal examination during the second month of the gestation is advisable.

The address severely reprobates any manipulation of the os uteri during the first stage of labor, and especially any attempt at its rapid and forcible dilation. "More especially is this meddlesome and mischievous manipulation of the cervix in this stage of labor to be deprecated, when we have in the use of morphia, hydrate of chloral, and other anæsthetics, such safe and efficient means of overcoming the painful delay that so frequently attends it."

To the care of the perineum, during its extreme distention as the head descends, so as to prevent laceration at the moment of delivery, the address devotes considerable attention. The danger of leaving it entirely alone, as taught by some, is pointed out. The plans proposed by Playfair and Goodell, to relax the perineal tissues, while approved as accessory measures, are claimed to be insufficient. The point enforced in the address is that the descent of the head must be prevented by firm pressure directly upon it, until the peri-

neal tissues have had time to yield slowly, yet sufficiently, to allow the head to pass safely. To carry out the points made by Professors Playfair and Goodell, viz: "to relax the tissues of the perineum," and at the same time to assist in restraining the too rapid descent of the head, Dr. Price has recently used a towel four feet long, folded lengthwise to a width of six inches, passed in front of the pubes and over the trochanters, the free end secured by two strong safety pins, over a firm pad resting against the os-coccygis and the anal orifice. The effect of this is to crowd the surrounding tissues in the direction of the vulvar outlet, securing all the relaxation that is possible, at the same time keeping the head pressed towards the pubic arch.

The action of this pad and band is pleasant to the patient and effectually protects the coccyx from injury, which, as is well known, is often the cause of that most serious malady, coccyodynia. At the moment of greatest distention, the action of the band should be aided with the left hand of the accoucheur, while the other resists the too rapid advance of the head by direct and firm pressure.

In every case the perineum should be inspected, and if any rupture of its proper tissues has occurred, the surface should be dusted with iodoform and closed by the proper suture.

The danger attending post-partum hemorrhage and recent teaching as to the best means of meeting it, are discussed at some length. "The chief point to be kept in view is to secure a firm tonic contraction of an empty uterus." The administration of a full dose of ergot just at the completion of the second stage of labor, is a matter of routine by many of our best obstetricians. The placenta should be immediately expelled by the Credé method—*using both hands*. The compression is to be continued until the action of the ergot is well established. If this is done no coagula form, there is little subsequent hemorrhage. The impression of the ergot should be kept up for twelve hours, and if a tendency to relaxation exists, for a longer period. The involution of the uterus is, by this treatment, advanced, and the risk of the septicæmia greatly reduced. * * * *

"Occasionally, however, in spite of every precaution, we fail to get contraction, and blood pours out in torrents. The uterus remains a limp, flabby bag. These cases are fraught with the greatest peril, and unless met with skill and promptitude will surely be lost." * * * * The one great point to be accomplished, viz., uterine contraction, must be kept distinctly in view; mere styptics will be unavailing. Profs. Wallace and Penrose, of this city, rely with confidence upon a sponge or soft cloth soaked in vinegar. The former says the effect of the vinegar is magical. The flabby uterine muscle instantly responds. The organ assumes a gizzard-like feel, shrinking down upon and compressing the hand. In the vast majority of cases the hemorrhage ceases instantly.

Dr. Albert H. Smith, in common with a large number of practitioners, relies upon injection into the uterus of a stream of water at a temperature of about 115° F. Dr. E. Wilson's preference is for a lump of ice passed quickly into the uterus, and upon this I have for many years relied, without failure in any case. * * * * Dr. Barnes introduced and extolled in the most decided manner, the intra-uterine injection of solution of persulphate of iron in the proportion of one to three of water; but in the prolonged and very able discussion of his paper in the London Obstetrical Society, the dangers that attend this practice were fully established, and its use is not now supported. Swabbing the uterine surface with the iron is enthusiastically recommended by Engelman and others.

Placenta-prævia claims considerable attention in the address. "Shall the pregnancy be allowed to continue?" is a question that in every case has to be met at the onset. In the discussion in the Obstetrical Society of London, of a very able paper by Dr. Greenhalgh, advising the immediate induction of labor in all cases of placenta prævia, all the eminent gentlemen that participated, although differing upon details, agreed as to the inadvisability of allowing the gestation to go on after the diagnosis had been positively made.

The plan of management so ably advocated by Dr. Davis, of Wilkesbarre, in the address on Obstetrics for 1876, is approved, but is not successful in all cases. "Sometimes there is failure to get the forceps applied, the bleeding goes on, and version must be resorted to at once, or the bleeding is profuse and obstinate before dilatation allows of the procedures of Dr. Davis. Our old friend, the tampon, must be called in, or better, the colpeurenteur of Braun, filled with water tightly enough to distend the vagina and stop the flow, or better still, the carbolized sponge tent of large size passed well up the cervix. Dr. Jungbluth, of Aix la Chapelle, at Friedburg meeting of the German Gynecological Society, strongly advocates this treatment, and gives minute directions for the preparation of these tents, and the manner of using them. He reports six cases; all the mothers were saved, and only one child lost. Hofmeier and Behm, of Berlin, condemn the use of the tampon in all cases, and strongly urge premature combined version and slow extraction, with certainly brilliant results so far as the mother is concerned—one death in eighty-two cases—but their mortality with the children is frightful, being over 70 per cent.

After careful study of the whole subject of placenta prævia one cannot avoid the conclusion so well stated by Lusk, "that the result depends in a large measure upon the personal qualities of the physician in charge. A self-possessed man, cool, resolute, and with clear ideas of the anatomical conditions to be dealt with, will, if summoned in season, deprive even placenta prævia of a good share of its terrors."

The pathology and treatment of puerperal convulsions receives careful attention in the address, and the diversity of opinion that exists is deplored. Though usually associated with albuminuria, the fact is well established that the condition is not always present. "The generally received explanation is that these attacks arise from overstimulation, reflex in its origin, of the vaso-motor and convulsive centres, and this may occur independently of uræmia, although this condition vastly increases its liability." In treatment the deleterious influence of mental excitement, exposure to cold, and indigestion, are to be kept in mind. When an attack threatens, full doses of

bromides, of hydrate of chloral, and morphia (the latter hypodermically), are indicated when the action of the kidneys is deficient; the muriate of pilocarpine (hypodermically), aided by hot foot-baths to bring on diaphoresis, are very beneficial. But perhaps the most efficient of all remedies, at this stage, is the free abstraction of blood. No other means can be so safely relied upon to lower arterial tension, diminish irritation of the vaso-motor and convulsive centres, and restore to the kidneys their normal functions. Speigelburg claims that these three indications are most completely filled by venesection.

Dr. Price traces the causes that brought this fine "therapeutic measure" into disrepute, and earnestly pleads for its proper use.

Puerperal fever is the last subject discussed, and from its great extent* this discussion is necessarily limited. The difference in views of Profs. Thomas and Barker, as brought out in a recent discussion in the New York Academy of Medicine, is referred to. The writer concludes the subject by a brief statement of the pathology, etiology, prophylaxis and treatment from the Vienna standpoint, as recently given by Prof. W. M. Jaggard, of Chicago, in the *Medical News*, of this city.

Dr. Price in conclusion said, "I wish to congratulate you upon the progress that marks the history of Modern Obstetrics. The greatly increased skill in action and precision in results is most encouraging. Time will not permit of details, but I will name the use of anæsthetics, the better appreciation of the action of opium, ergot, chloral, pilocarpine, and of hot and cold applications, and consequently their more judicious and efficient use in practice. And lastly the general use of antiseptics, by which the results in operations have been vastly improved and the most formidable disease of the paturient condition shorn of much of its danger. To the younger members let me say that no branch of our science is more worthy of or requires higher culture than this.

"The difficulties and dangers to be met are not only equal to those in any other part of surgery or practice—but they are likely to be sprung upon you without time for special preparation. In most of the formidable operations of surgery you can look about you and prepare carefully for the work—but in obstetrics, a convulsion, a frightful post-partum hemorrhage, or a ruptured uterus, may confront you most unexpectedly.

"To the young men in our ranks I earnestly appeal, to make yourselves, in every way, worthy of the confidence of the other sex—for it is the highest tribute that can be paid to your professional culture and purity of character, for an intelligent and pure-minded woman, to seek your care in the perils of child-birth or in the diseases peculiar to her sex.

"In making this appeal to you, specially, I intend no discourtesy to those excellent women who, despite all obstacles, have trained themselves for good work in the profession, and whom we have, at last, been sufficiently just to admit to full membership. I make it simply because of my conviction that in all the future, as it has been in the past, the chief burden of professional work must come upon our sex. The place of women in medicine, as in all public life, is exceptional, and must ever be limited. And in speaking thus I have no wish to open up the much abused and perhaps silly question of woman's rights. She is as ourselves, a human being, having the same impulses, equal talents, and confessedly greater quickness of discernment, and she should certainly have the same *right* as ourselves, to do anything that is respectable and proper. And it is mean and tyrannical in man, the stronger, to place obstacles in the way of any individual woman, who—impelled by God-given talents, or perhaps by necessity put upon her by the indolence or incapacity of a father, or husband, or brothers—seeks the honors and emoluments of public life. Yet such must ever be exceptional. God has not left it for man, or woman either, to arrange the respective duties of the sexes. He has stamped upon woman, functions which involve duties that will always limit her public life. Exceptional women may be successful merchants, doctors, lawyers, or even captains, but through all time the mass will continue to be wives, and mothers, and sisters, and find their highest duty, as well as purest happiness, in keeping up in all its sacredness and purity, the true home—that institution upon which, more than upon churches, and constitutions, and armies, depends the perpetuity of virtue, of liberty, and of independence."

* Dr. Price, in speaking of vaginal irrigation in cases of puerperal fever referred to a bed pan devised by Dr. Hanks, of N. Y., as greatly facilitating the operation. It is well made, at a very moderate price, by George Marston, 406 East 20th street, New York.

"OBSTETRICAL FORCEPS JOINTED AT THE JUNCTION OF THE BLADES AND SHANKS,"

was the title of a paper by Dr. J. A. McFerran, of Philadelphia, who said:

The much ado about individual skill in the use of the obstetrical forceps, the confusing descriptions of complicated manœuvres necessary to their proper handling, the solemn warnings of celebrated teachers to the young and inexperienced, are reflections upon the intelligence of the majority of the profession, or a confession that it is an instrument which should be banished from use.

Of necessity, there can be but few experts; every practitioner should, therefore, be qualified to use the instrument. To me, it seems an incomprehensible thing that any one taught as they must be in our colleges, could be incompetent to use the forceps properly, and yet be qualified to practice safely the more recondite duties of their calling.

In no branch of our profession is prompt, decisive, and intelligent interference called for oftener than at the bedside of a woman in labor; and there is no instrument at the bedside so efficient as the forceps, and none in the whole domain of surgery should be better understood.

After recounting what he considered to be the chief objections to all the forceps in ordinary use, the speaker said: "I designed a pair of forceps in the fall of 1877, joined at the junction of the blades and shanks, upon which I read a paper before the Philadelphia County Medical Society, that was published in the MEDICAL AND SURGICAL

REPORTER of December 1 and 8 of the same year. These forceps I bring before the Society after having fully tested them on several occasions after the failure to deliver with other forceps, and always with perfect and quick success; and I can now, with a confidence such as experience alone can give, urge upon the profession a trial of this instrument. Once the forceps applied to the head, it is left free to deflect, flex, or extend. The line of traction is transferred from the junction of the head and neck to the joint of the instrument. By making the handles a lever, and one hand the fulcrum, placed close to the vulva, the head can be flexed and swept down in the axis of the pelvis. Even when traction is made from the extremity of the handles, the joint leaves the head free to deflect and pass an obstruction with the greatest possible ease. A chain will pass through a long and tortuous tube, when the length of the links does not exceed the distance between the curves, and it is upon this principle that the instrument acts when traction is made. Positions may be corrected, doing away with the use of the lever and a formidable array of instruments, avoiding dangerous delays and long-continued pressure. To illustrate, I have selected the sacro-pubic position. The head is somewhat extended and caught at the superior strait, the forehead resting on the promontory of the sacrum and the occiput on the pubic bone. Of course, the proper thing to do would be, if we could, to turn the forehead to the right and convert the third into a first position. But, if we suppose the head forced down between the two points, we may not be able to do so; only experts, after much trouble, could do so. With the ordinary forceps, as generally used, the head would be forced more and more between the opposing points of the strait. But with the jointed instrument the difficulty could be easily overcome, by producing greater flexion. Operating through the joint upon the vertex, it would be tilted back towards the hollow of the sacrum, thus liberating the head and facilitating its descent. In other positions the diameters can almost be made to coincide, by operating through the joint. In all cases we should endeavor to keep the head flexed, in order that it may avoid obstructions and the more easily rotate or be rotated in the pelvis. The nearer the posterior fontanelle can be kept to the centre of the pelvis, the easier will the labor be; with the jointed instrument this can be done without the manifestation of any great amount of skill by the operator. I ask you to remember that the jointed instrument has all the advantages of the ordinary forceps, as a tractor, as a lever, and in the independent application of the blades, while the disadvantages are dropped by simply placing a joint so that the motions of the fœtal head shall not be interfered with."

Then came Dr. Mary Stinson's paper on the "Work of Women Physicians in Asia," which we publish elsewhere, after which the Society adjourned for the day. In the evening receptions were held by Drs. Lawrence and C. S. Turnbull and by Dr. John V. Shoemaker.

The President, Dr. Henry H. Smith, delivered his address in Association Hall, when he said that the recurrence of the period when delegates from all our County Medical Societies assemble to interchange professional opinions and renew or form the fraternal ties of a distinguished brotherhood, has again brought us together on this the thirty-fifth annual session of the Medical Society of the State of Pennsylvania.

This theme I would formulate as the

IMPORTANCE AND USEFULNESS OF SCIENTIFIC ORGANIZATIONS

to our profession and the public.

In order correctly to comprehend the objects obtainable by such organizations, it may be useful, 1st. To note their origin and elementary form, as described in history; 2d. Show in what manner our annual meetings are useful to the profession and the public; 3d. Allude to the reciprocal obligations of the public to the profession.

The Doctor then referred to the history of the first societies organized.

In the association of individuals that thus formed societies, it soon became apparent that some laws or rules of action applicable to each and every member must be adopted, in order to regulate intercourse and restrict irregular or individual opposition to the interest of society, and that in these laws, as in those of all communities, the most important portion would be "the penal or vindicatory clause," it being useless to say, Do this or avoid that, unless the law also declared what would be the penalty or consequence of non-compliance. Ethics, or the law of manners, collected in a paper-book, termed Codex or Code, was thus adopted at an early period in the history of all associations; and the Code of Ethics of the American Medical Association is but another illustration that "history repeats itself."

The origin of our own State Society dates back only to the year 1848, when the pre-existing County Societies of Chester, Philadelphia, and Lancaster, elected delegates to a Medical State Convention that assembled in the city of Lancaster, to take the necessary steps to create a State Society such as was required to form a part of the American Medical Association.

A question that has been warmly discussed in connection with this Code is the right of members of the American Medical Association, or a county society, to consult at the bedside or office, in regard to the diagnosis and treatment of disease, with those who practice and believe in an exclusive dogma, and especially that one revived by Hahnemann, of *similia similibus curantur*, or that "like cures like."

It matters little, in the consideration of this question, to ask how or why it arose. The propriety of such consultations is positively settled by the Code, and hence its repeal is advocated by that comparatively small number, especially in New York, who, perhaps, anticipate benefit from the change. Any one who reads the clause in reference to consultations will readily see that the Code recognizes the fact that two physicians of different medical creeds cannot agree on any question of pathology and therapeutics, when each is conscientious in the correctness of his own professional opinion.

The influence exercised by these annual meetings of our Society is, however, by no means limited to medical ethics, but extends to the entire community through the scientific work thus accomplished.

In reviewing all that this Society has done in the last thirty-five years, our increased knowledge of the best means of preventing or alleviating disease is very apparent.

No Post-graduate course of medical instruction, now so much in vogue, "with doctrines fashioned to the varying hour," offers more valuable information to a medical man than that afforded by the papers and discussions presented in our sessions.

Since 1848 many advances in pathology as well as in practice have been made in this body, and been subsequently developed for the public good.

In the annual reports made by the able chairman of the Section on Hygiene, and especially by him who has also for years faithfully served the Society in the care of its funds, how many suggestions have tended to secure the comfort and sanitary safety of many of the towns and villages of this great Commonwealth!

The fear of "taking cold," and suffering from exposure to fresh air, is one constantly brought to the notice of every physician. Whilst apprehensive of "taking cold," the public seldom recognize the danger of being too hot, or of living in a temperature that often exceeds 75° Fahrenheit, in which every aperture for the entrance of the fresh air, that is so essential to the health of a respiratory creature like man, is carefully closed.

Not only is there with many an ancient and popular dread of fresh air, but the evil influence of fresh *night* air is yet widely noticeable. Many, who admit to some extent the beneficial influence of fresh air during the day, will hesitate about breathing the same air after sunset—a prejudice of ancient date.

Among the varied papers read in our meetings of marked public interest, and indirectly connected with the fresh-air question, was one "On the Influence of Growing Plants on Lung Diseases," which those present at our last session can readily recall.

The experiments there stated also render it probable that ozone is generated by *flowering* plants, thus rendering them an active disinfecting agent. From personal observation of florists and gardeners threatened with consumption, the author of the paper says, "he is convinced that their health was greatly benefited by the influence of plant life and the temperature and atmosphere of green-houses" (not hot-houses).

Popular sentiment has for a long period been entirely different from this, and many who are well read yet regard the presence of plants in a chamber as injurious to health, from the supposed amount of carbonic acid gas given off by them at night.

It may not be inappropriate in connection with the subject of State Medicine, also to call attention to the propriety of memorializing the legislature to modify the present mode of capital punishment, and make it correspond with the scientific progress of the age.

Without discussing the necessity of such punishment, we may justly urge that as its main object is the removal from society of those whose lives are detrimental to its best interests, this should be accomplished in the least painful manner; and it does seem as if death by means of electricity should at present receive due consideration.

I feel that I advance the cause of humanity when I direct attention to this subject with a view of obtaining legislative sanction.

The great advances made in chemistry, and our increased knowledge of pathology, have also greatly changed the treatment of disease and the administration of medicine.

I know that the popular idea is, that the regular, scientific practice of medicine has been greatly benefited in this respect by the introduction of homeopathy; but this is not so.

Why are we so generally designated as allopaths that even a Congressional bill contains the name?

The answer usually given is, an allopath is one who treats disease by large and nauseous doses of medicine, whilst a homeopath gives little tasteless powders and sugared pellets.

Now, nothing is more erroneous as a definition than this statement. The dose of a medicine has nothing whatever to do with the name of allopath or homeopath. The distinction between these two schools of medicine is founded on a much more serious difference.

As our Code directs us to be ever vigilant of the welfare of the community, and to give counsel on matters specially pertaining to our profession, I have thus imperfectly alluded to a very common error, the result of which may be briefly summarized as having shortened life and lengthened suffering. I trust, however, that in referring to the unscientific character of homeopathy as a medical doctrine, I may not realize the correctness of the statement of Macdonald in one of his essays, "that many forms of error, perhaps most, are better let alone, to die of their own weakness, as the galvanic battery of criticism only helps to perpetuate their ghastly life."

I have, perhaps, detained you too long from pleasanter engagements in thus alluding to topics known to many of you; but in doing so, I have endeavored to illustrate "the importance and usefulness of scientific medical organizations to our profession and the public."

If I have failed in this, I trust you will recognize the difficulty of properly discussing the subject in the portion of time justly allotted me. I have, as you will notice, abstained from reference to the progress of medical science during the past year, though it might have proved more attractive, as this subject will be ably presented by other members of our Society.

Permit me before closing to acknowledge my appreciation of the attention accorded me on this occasion, and to express the hope that the present session of the Society will promote not only the hygienic interests of the Keystone State, but also that of other communities.

THIRD DAY.—MAY 16.

At the morning session, Drs. Leidy, Daly, and Traill Green spoke in favor of a resolution requesting the members of the profession to aid the Anatomical Board in carrying out the acts of assembly relative to the distribution of cadavers for dissection. The resolution was adopted.

"THE VALUE OF PUPILLARY SYMPTOMS IN GENERAL DISEASE—AN ANALYSIS OF ONE THOUSAND CASES,"

was read by Dr. W. S. Little, of Philadelphia.

After the hospitals for chronic disease had admitted ophthalmic surgeons, trained in special hospitals, to their wards, ophthalmic medicine rapidly developed, and soon hospitals for acute disease claimed their services. The past twenty years has been the era for developing ocular symptoms in general disease. Medical education has felt the same impulse, and post-graduate instruction is the outgrowth of the success of instruction in ophthalmic hospitals abroad and at home. Special hospitals for the eye and ear now include in many of our large cities a department for throat, skin, and nervous diseases.

Medical ophthalmoscogy has been the principal factor in developing ophthalmic medicine, lesions in the eye-ground being found in Allbutt's cases in 89 per cent., in Noyes' cases that I have studied in 73 per cent., in Gower's cases in 100 per cent.

In my case studied at Elwyn, Pa., the institution for feeble-minded children, under the care of Dr. I. N. Kerlin, I found lesions in the eye-ground in 13 per cent. the age of the patients and varieties of disease exhibited there rendering the percentage necessarily less than the others referred to.

The study of the visual field for perception of light and color is another means of help in studying general disease.

Ophthalmoplegia externa and interna has received the greatest attention of late. Pupillary symptoms belong under the head of ophthalmoplegia interna.

The statistics of many observers vary largely as to their presence in disease, especially of a nervous type. I have believed the variation to be due to non-recognition of the symptoms being produced by intra-ocular and extra-ocular conditions, only the latter are of any value in general disease, and the former must be excluded, unless both conditions are recognized.

Castiglioni found seventy-five per cent. among insane; Nasse, sixty-four per cent; Wennicke, twenty-four per cent. The study of Allbutt and Gower's cases affords me their presence in twenty-three per cent. of their cases in acute disease. Allbutt and Noyes, Insanity—.05 per cent. in insanity.

The development of theories of pupillary movements from ancient to modern times has changed as anatomical knowledge of the cerebro-spinal system has been rendered clearer and anatomy of the eye worked out; the influence of reflexes upon the pupil are now quite well-defined, and the pupil can be studied with better knowledge than formerly. In acute disease among Allbutt's and Gower's cases it has a prognostic value, in sixty-seven per cent. of the cases fatal results occurring.

After giving the physiology of pupillary movements and describing how to study the normal and abnormal pupil, the results of a personal examination of three hundred and fifty cases at the Institution for Feeble-Minded Children at Elwyn, Pennsylvania, under the care of Dr. I. N. Kerlin, are stated. The examination here was thorough, and intra-ocular and extra-ocular conditions, as a factor, studied. Ophthalmoplegia externa existed in only two cases. Ophthalmoplegia interna from cerebral causes, or associated with the disease exhibited, was present in seventeen per cent. as follows: Males, 17.4 per cent.; females, 17.3 per cent.

Varieties of pupil.:

Maximum	6.2 per cent.
Minimum	4.2 "
Unequal	6.5 "
Hippus	0.2 "

Varieties of Diseases:

Imbecility	High grade	9.7 per cent.
	Middle grade	14 "
	Low grade	12 "
Ideo-imbecile		28 "
Idiocy		41 "
Juvenile insanity		20 "
Epilepsy		37 "

Intra-ocular causes excluded in 20.9 per cent.

At the Male Institution for the Insane, S. E. District Penna., Norristown, Pa.:

154 males,	43.5	per cent.	with	pupillary symp.
154 females,	35.7	"	"	" "
308 total,	39.6	"	"	" "

Varieties of pupil.:

Maximum	11 per cent.
Minimum	12 "
Unequal	14.6 "
Immobile	1 "

Varieties of Diseases:

Monomania	16 per cent.
Melancholia, Acute	25 "
Melancholia, chronic	35 "
General Paresis	100 "
Imbecility	20 "
Chronic Dementia	39 "
Mania, Acute	35 "
Mania, Chronic	55 "
Mania, Recurrent	50 "
Epilepsy	66 "

My work being done in institutions whose medical officers reputation in diagnosing the disease treated there, renders my statistics more valuable. For the facilities granted and enjoyment my thanks are due.

One thousand cases have thus been studied:

602 males,	22.4	per cent.	pupillary	symptoms.
398 females,	24.8	"	"	"
1000 total,	23.5	"	"	"

"ALARMING AND DANGEROUS DOSES OF THE MYDRIATICS,"

was the title of a paper by Dr. Edward Jackson, of West Chester, who said that as it is important to understand the limits which are imposed upon the dose of atropia and other mydriatic alkaloids by danger of fatal poisoning, this paper has been prepared to remind practitioners that these limits are not really so narrow as many seem to think. Atropia being generally used in doses of one milligramme (one-sixtieth of a grain) or less, the impression grew that it would be dangerous to greatly exceed that amount; and this impression was strengthened by the fact that somewhat larger doses were apt to cause the common symptoms of atropia intoxication. But among two hundred and fifty-seven reported cases of poisoning by the various mydriatics, only seventeen had proved fatal—while the whole number of fatal cases of mydriatic poisoning to which even the slightest allusion had been found was, for belladonna and its preparations, eleven; datura, twen-

ty-five; and hyoscyamus, two; and it was probable that some of those caused by datura were counted twice.

The paper contained quotations and abstracts of such of the above cases as bore directly on the subject under discussion, among them twelve cases in which the amount of atropia taken was known to exceed one half-grain, yet the patients recovered. Allusion was also made to the report of Dr. Fuller, of London, on the extreme tolerance of belladonna shown in choreic children, one taking as much as seventy grains of the officinal extract daily, and another taking thirty-seven grains of atropia in eighteen days. In the case of acute mania reported by Dr. Sydney Ringer, one-grain doses of the crystallized alkaloids, atropia, daturia, and hyoscyamia, were repeatedly given with benefit to the patient.

It was urged that, knowing these facts, practitioners should not hesitate to use this class of remedies more freely, whenever such use of them seemed indicated, special reference being made to the preservation of eyes from damage by iritic adhesions.

Then followed

"A FORM OF EPITHELIAL MYCOSIS,"

by Albert G. Heyl, M. D., of Philadelphia.

The disease described in this paper has long been known to ophthalmologists, and has been principally studied by them. In its graver forms the general symptoms are of far more importance than those observed in the eye, as the disease is frequently fatal. It is, therefore, opportune to give an account of some recent researches which have cleared away a great deal of obscurity which has invested the subject. This disease has been known under various names, *e. g.*, corneal gangrene, kerato-malæia, ophthalmia Braziliana, etc. Graefe described it under the title of corneal ulcer of infantile encephalitis; his idea being that the corneal affection was of atrophic nature, the primary cause being an encephalitis. Gastrowitz has made this hypothesis untenable, by showing that these supposed encephalitic products are simply the remnants of fœtal life. Leber, within a few months, has given a full description of a parasite found intra vitam in the conjunctival debris, and post mortem in the epithelium of the renal pelves and in the small intestine. This parasite attacks the epithelial cell, inducing fatty degeneration of its structure. The dead cells accumulate in lamina, giving rise to a characteristic dry parchment-like appearance, the so-called conjunctival xerosis. The disease is usually ushered in by hemoralopia. This symptom, which is associated with the conjunctival xerosis, may last a month or two when corneal ulceration commences.

About this time general symptoms appear. There is rise in body temperature, frequency of pulse, a dry, harsh condition of the skin, the hair on the head becomes dry, lusterless. Along with this a peculiar state of apathy is developed. Persistent purging and vomiting occur, and finally broncho-pneumonia, to which the patient succumbs. All cases do not run precisely this course. Some do not proceed beyond the stage of of hemeralopia, in others the corneal ulceration appears after the inception of the general symptoms. In some the apathetic state is the most striking symptom. In some constipation exists instead of the purging. The existence of a parasite in the conjunctiva in this disease was known before Leber's researches. But Leber has not only given a clear account of it, but also shown that it attacks the epithelial cell, and that it is found in other localities besides that of the conjunctiva. Probably the symptoms of the disease are traceable to this epithelial mycosis. Dr. Heyl gave adduced reasons for considering the epithelial cells as the receptive organ of centripetal nerves. Destroy these receptive organs in the conjunctiva and certain impressions of light will fail of being conveyed to the proper centre. A distinction was drawn between those impressions which, coming from the outer world, may issue into voluntary action and those which issue into involuntary action. Thus the sensation of light, and that impression of light which is followed by the reflex movement of the lids, are two different things. It is the latter which is absent in this disease by reason of the destruction of the terminal epithelial cells by which it is accomplished. The same rationale may be applied to the skin, which is a vital organ containing a principal part of the thermic apparatus. The epithelial cells may be looked upon as the receptive organs through which the sweat-glands are set in action. Destroy these, and the function will be abrogated. Thence the apathetic state and, possibly, the broncho-pneumonia are developed. The purging and vomiting seem to be due to the direct presence of the parasite. In the treatment, the careful administration of food is important, and as the application of moist heat to the eye has been found very serviceable, possibly it would also be if applied to the surface of the skin.

After which Dr. Carl Seiler of Philadelphia read a paper on

"AN ELECTRIC LARYNGOSCOPE,"

in which he described an apparatus for the illumination of the laryngeal, nasal, and other cavities of the body by means of an electric incandescent lamp. He first gave a short historical sketch of the experiments made by others in the same line of investigation, and described the instruments invented by Adams, Trouve, and others, and then gave a detailed description of his instrument, illustrated by a demonstration of its capabilities for practical use in examining the laryngeal and nasal cavities.

The instrument consists of the ordinary head reflector, attached to which is an arm of metal four inches in length, which carries on its end a small incandescent lamp, lighted by electricity by a current from a battery. The light of the lamp is reflected from the head mirror into the patient's mouth, and is then reflected downward by the ordinary laryngeal mirror. A shield of silvered mica is placed around the anterior portion of the lamp to prevent the light from falling directly into the patient's face, and also to utilize all the light given off from the incandescent carbon filament. The apparatus is light and easily carried on the forehead of the operator, and has the advantage over the head mirror without the lamp attachment, that when the reflector is once adjusted on the forehead, the light is always

thrown in the direction of the axes of the eyes. It has also the advantage over similar instruments that it can be used for the examination of the eye as well as of the ear, since the operator can bring his pupil before the central perforation of the reflector; and should the source of electricity give out unexpectedly, which will frequently happen when the operator is not sufficiently conversant with the tricks of batteries, the head mirror can still be used in the ordinary way by reflecting a stationary light.

Then followed a paper entitled,

"DOES A CHRONIC DISCHARGE FROM THE EAR MAKE LIFE INSURANCE HAZARDOUS?"

by Dr. Charles S. Turnbull, of Philadelphia, who calls attention to a point of vital interest to life insurance companies and their medical officers. He describes the too frequently hazardous condition of those persons making application for life insurance policies, holding that some of these, while passing a first-class physical examination, may at the same time be suffering from fatal discharge from the ear.

He maintains that whatsoever the plan may be, whether mutual, life, or endowment, the risk incurred and the liabilities assumed by life insurance companies, through their medical examiners, is in no small way compromised by the existence of a chronic ear disease of the applicant to be insured.

Deaf persons are not insured by the leading life insurance companies, at least not at ordinary rates, because of the self-evident fact of their being in imminent peril; hence, such are not considered, or are accepted as "extra hazardous."

An otorrhœa may exist and be entirely overlooked by experienced examiners, and this is, in his opinion, in many cases a much greater source of danger to life than that arising from the mere physical defect of not hearing. Deafness of a dangerous or hazardous degree cannot be concealed, and is only an element of risk in so far as accident is concerned; while a chronic purulent inflammation of the middle ear, with, perhaps, some polypoid or necrotic complications, can be intentionally or unintentionally concealed, or on the other hand be overlooked, while it threatens life within a year. One remaining sound ear may do all the work, and the examiner, as well as intimate friends, may never suspect the defect. Total deafness, like total blindness of one side, may exist for years, even a quarter of a century, without even the afflicted individual being aware of the fact, and a purulent discharge continue from childhood without causing annoyance, or indeed even a thought.

He suggests an ocular inspection of the ears, and at times, when of sufficient importance, the employment of an expert, because in his experience he had known of liabilities incurred where even a hasty examination of the ear would have saved the insurance companies thousands of dollars.

The same may be said with reference to the organs of sight.

He concludes by urging the profession to exercise more care in the treatment of the ear-symptoms and complications in the exanthemata, and likewise calls especial attention to the importance of the insurance companies making the examination of the ears compulsory in every case.

As an easy yet complete method of examination of the ears, he suggests the following, which places the examiner in a secure position, and makes him entirely independent of the statements of the examined, as well as of instruments of precision, or reflected light:

1. *Test each ear separately with the watch, the eyes being covered.*

2. *Inspect by good daylight the auricular region, especially noting condition of mastoid or cicatrices thereabouts.*

3. Inspect (nasally, as do the gas-fitters) each auditory meatus, and;

To sum up—what the impaired hearing does not suggest, cicatrices from loss of bone or fistulous orifices over temporal bone, will point out; while the presence of pus, or what is more significant, of fetor, will settle the question.

A purulent discharge from the ear should always raise a question with insurance companies, and its character and ultimate course as to the future health of an individual can only be settled by an acknowledged expert, *i. e.*, men of experience must say whether it be curable or not, so that full justice may be done both examined and examiner.

Dr. P. D. Keyser read a continuation of his paper entitled

"OPHTHALMOLOGICAL OBSERVATIONS DURING TEN YEARS' SERVICE IN THE WILLS EYE HOSPITAL."

He described a cystotome of his design for rupturing and drawing up of the anterior capsule for the removal of a piece of it in the operation for extraction of cataract. He gave his modification of Pagenstecher's operation for the removal of pterygium; and also the history of an interesting case of complete paralysis of the sixth pair of nerves from injury to the head, causing extreme double convergent strabismus, which was relieved by operation of shortening and bringing forward the external recti muscles.

Four cases of glioma of the retina were narrated, two which were operated upon by enucleation, and the macroscopic and microscopic account of the balls given.

Dr. John B. Roberts read the address in surgery, entitled

"SURGICAL DELUSIONS."

Many surgical theories and procedures have become traditional, and are accepted as true and correct merely because reverence for antiquity or careless acceptance has not questioned their right to be classed as surgical facts. The present age is an incredulous one, and demands accurate investigation of all such claims. The field of investigation is large, for progress has been retarded by the influence of theorizing writers and monochromatic vision, the example of non-seeing and non-looking devotees of the fetiches of surgical superstition, and the convincing effect of a repetition of false statements. I shall select a few topics which have greatly interested me, and concerning which I probably differ quite widely from many of you.

Chloroform Anæsthesia.—Many still cling to the delusion that chloroform is a safe anæsthetic, because they have never seen a patient die from it. Is one man's experience to weigh against the physiological, the experimental, the clinical experience of the whole world? Dare we employ chloroform instead of ether, when recognized authorities state that in chloroform anæsthesia death occurs without warning in the hands of experienced administrators, when some five hundred deaths have already been reported, when Schiff and Dalton reject it in physiological laboratories because of its mortality, when the Scientific Grants Committee of the British Medical Association assert that chloroform is a more dangerous anæsthetic than ether? Adherence to chloroform in the face of such facts is criminal, when circumstances permit ether to be obtained. The assertion that it is often impossible to produce anæsthesia with ether is the result of inefficient methods of administration. Ether, if given as chloroform is and should be given, is in truth a useless anæsthetic, but given properly it is efficient.

Value of Styptics.—The belief in the necessity of styptics is a delusion less dangerous than that just mentioned, but is given more extended credence. Such agents are seldom, probably never needed in general surgery to arrest hemorrhage. When ligatures, torsion, or acupressure is not demanded (and such is seldom the case unless the artery is as large as the facial), moderate direct pressure applied in dressing the wound is the only hemostatic required. Styptics often do harm, and, as they are not needed, they should be discarded.

Fatality of Small Hemorrhages.—There is much misapprehension about the quantity of blood that a healthy man can lose with impunity. Many who often look with equanimity upon a parturient woman losing a pint of blood from the uterine sinuses, would be dismayed at a man losing half or quarter that amount during removal of a tumor. While not advocating needless waste of blood, and especially in patients suffering surgical shock, I assert that there is an unnecessary fear of blood spurting from a few insignificant vessels. The largest artery can be controlled by pressure not greater than is used for ringing the electric bell in your hotel. Hence there is always sufficient power in your fingers to obviate hemorrhage until strings can be obtained and applied.

Danger of Trephining the Skull.—The dislike to make exploratory incisions in closed fractures of the skull evinced by some surgeons, and the objection of others to trephining, and thus opening the diploic structure in open fractures, are delusions of a most disastrous tendency. To wait until symptoms of cerebral compression or inflammation have supervened, is to lose the most favorable opportunity for mechanical relief. Such a Fabian policy is often followed by death. The treatment of open and of closed fractures of the skull should not be looked upon as very different, since with the present improved methods of dressing wounds the successful issue depends almost entirely upon the cerebral rather than the cranial phase of the injury. If such fractures as are usually seen in the skull were not in proximity to the brain, the surgeon would consider them almost trivial. The feature of closed fractures that renders them so troublesome is the obscurity that accompanies them. I have, for a number of years, strongly advocated making closed fractures open ones by means of an exploratory incision, whenever there is a suspicion of the existence of depression or splintering. In open fractures, operation to elevate depressed portions and get rid of splinters of the inner table thrust into the membranes should be undertaken rather than avoided. It is better to err on the side of action than that of inaction. Careful manipulation and proper dressings at an early stage are sources of less risk than is incurred by the surgeon who leaves unseen and unsuspected fragments thrust into the membranes or brain.

Operative Delay in Strangulated Hernia.—A similar delusion of fatal issue is that leading to postponement of the operative interference in strangulated hernia. Repeated attempts at forcible taxis and medical pow-wowing with temporizing measures have ended more lives than the use of the knife. Herniotomy done within twelve hours is almost always followed by recovery. Death is to be expected, however, if strangulation has existed for two or three days, and the gut has been bruised by violent manipulation in the endeavor to relieve the constriction by taxis. Moderate taxis under ether, a half day's treatment with cold applications and the internal use of morphia, and a second moderate attempt at taxis, followed, if unsuccessful, by immediate operation, is the sequence to be followed in strangulated hernia. When symptoms of strangulated hernia exist, the slightest fullness and tenderness in one groin over either of the rings is a sufficient localizing indication to warrant operation.

Operative Delay in Acute Phlegmonous Inflammation.—No insane delusion, no Spanish inquisitor, ever caused so many hours of excruciating physical torture as the hallucination that acute abscesses and furuncles must not be incised until pointing has occurred. All the world knows that evacuation of imprisoned pus in phlegmonous inflammations means instant relief of the agonizing pain; yet how few of the profession early and freely incise such inflamed tissues, unless they first see the yellow pus under the thinned skin, or feel the fluctuation of the fluid in the abscess cavity? The pain is caused by the effort of the pus and sloughing tissue to escape. Is it not, then, more rational to make a free incision to-day than to wait till next week? Time and pain are both saved by early incision. If the cut is made before the pus has actually formed, so much the better. Probably no form of abscess needs early and free incision more imperatively than that under the palmar fascia. Destructive burrowing of pus is prevented by this radical procedure, which, also, saves the patient many days of poultices and purgatory.

Operative Delay in Malignant Tumors.—Much bad surgery results from a delusive postponement of operative interference in malignant diseases. Instant removal is to be practiced in such cases, provided the patient is deemed fit to stand the surgical shock.

Necessary Fatality of Traumatic Tetanus.—That traumatic tetanus is of necessity fatal is a commonly held opinion. Proper treatment is sometimes neglected because of this belief in its hope-

lessness. That the prognosis is extremely unfavorable I admit, but that cases of a severe type recover is undoubted. Chloral hydrate in full doses has given the best results; but I do not propose speaking of therapeutics at this time—I merely wish to impress upon the profession the fact that a fair number of cases of traumatic tetanus recover.

Fatality of Pericardial and Cardiac Wounds.—The prevalent notion of the excessive danger of these wounds is delusional, at least in as far as it teaches that these structures will not brook surgical interference. The pericardial sac should be dealt with exactly as the pleural sac, by aspiration, incision, irrigation, and drainage, according to the lesion. That simple puncture or aspiration of the heart itself is not accompanied by the expected risk to life has been pretty well shown, though I am not prepared to recommend its general adoption for trivial cardiac conditions.

Symmetry of Normal Limbs. Another delusion still existing in many minds is that the lower extremities are usually of the same length. Clinical and anatomical investigation show that asymmetry in the length of normal limbs is a common occurrence. Therefore, measurements of the legs in cases of fracture are of little value, since it is impossible to know whether it is the femur of a long or a short leg that is the seat of injury.

Uselessness of Treating Vicious Union of Fractures.—It is a fact not sufficiently appreciated that many cases of deformity from imperfectly treated fractures of long bones can be remedied by refracture. Over and over again have I seen cases of grave disability and deformity cured by the application of sufficient force to break the callus uniting the misplaced fragments. Five or six months is not too late to resort to this expedient for correcting what otherwise must be a life-long evidence of defective surgical attendance.

There are many other prevalent surgical delusions, such as: that bony union of transverse fractures of the patella and of intracapsular fractures of the femoral neck cannot take place; that chronic purulent discharges from the ear do not need active treatment, that hypermetropia and hypermetropic astigmatism can be properly estimated and corrected without paralyzing the accommodation; that it is improper to perforate the nasal septum in cases of great deviation; that crooked noses are not amenable to treatment; that corneal operations and cataract extractions should be treated by cotton padding and bandages to the eyes; that fractures should be treated with carved or manufactured splints.

While an earnest advocate of conservative and of reparative surgery, I believe that when operative surgery is demanded it should be aggressive. Delay, indecision, and inefficiency impair the value of much surgical work, and are often the legitimate result of a superstitious faith in delusive surgical dogmas.

Then followed the paper by Drs. Edward T. Bruen and J. William White, which we publish elsewhere.

Dr. Nancrede then read a paper on

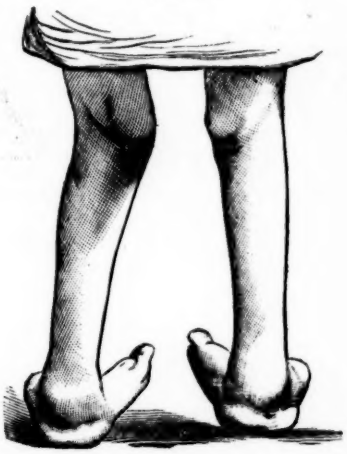
"THE BICHLORIDE OF MERCURY AS A SURGICAL DRESSING."

The next paper on

CLUB-FOOT. IS TARSOTOMY NECESSARY IN CHILDREN?

Was by Dr. De Forest Willard who presented a patient (together with photographs and plaster casts) upon whom he had operated two years ago for an extreme degree of varo-equinus, congenital and double. The girl had been subjected to tenotomy when an infant by a homœopathic surgeon, but as he never returned to the house after the operation, it may well be imagined that little benefit was secured, and the result was that the parents were so prejudiced against any interference that they permitted the child to go untreated, and, running around in her bare feet, she had, when seen at the age of eight, produced the deformity shown in Fig. 1. (Front view. From a photograph.)

FIG. 1.



The outer dorsal aspects, protected by large bursae and callosities of the size of small oranges, were in contact with the ground at each step, while the toes presented backward, and the plantar surfaces looked outward, owing to the great inversion of the legs in the effort not to strike the toes in the "reel-foot" action. This inward twist was most marked at the left knee, and the anterior surface of the tibia was rotated at least 30° on its long axis from its normal relation to the femur, thus causing the calf of the leg and the deformed heel to present directly outward. The legs were atrophied, the astragalus and cuboid very prominent in both feet, and the deformity at the medio-tarsal articulation sharp and abrupt. Strong pressure caused but little change of position in either foot, and the tissues of the soles and inside portions were extremely dense. The left foot was somewhat worse than the right, and its position was aggravated by the twist above mentioned.

The plan decided upon was to freely divide the tendo achillis and the tibials, as well as all the contracted tissues upon the inside of the sole save the skin, and then apply manual force sufficient to restore the limb, *redressement forcé*, as, even should the calcaneo-scaphoid ligaments yield, the trouble would still be subcutaneous, and therefore have

every advantage over an open incision. Failing by these means to strengthen the foot, a wedge-shaped tarsotomy would be performed.

The sections were made, as proposed, with a tenotome, first, of the anterior and posterior tibials, then of the long flexor, and then everything upon the inside of the sole was divided, the tendo achillis being left until near the end of the operation, in order to gain increased power in untwisting the varus. After long and severe stretching, the left foot was brought into good position, and section of the bones was decided unnecessary.

On the right foot, an assistant, who was an exceedingly strong man, applied unnecessary force, and the internal lateral ligament of the ankle was heard to snap, the foot at once sliding a little toward the fibular side. In consequence of this accident, which ultimately, however, proved beneficial in giving a straighter foot than the left one, the tissues upon the inside gave way at the first dressing, opening directly into the ankle joint; but thorough drainage and dressing with carbolized oil succeeded in closing the wound in about six weeks.

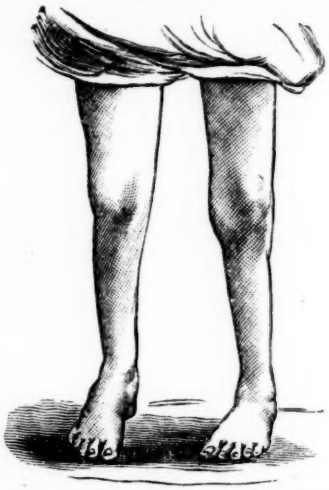
Both feet were placed in gypsum splints, which were afterward fenestrated for observation, and later, the author's shoe was applied, tractions, massage, stretchings, etc., being continued for months. The shoe (Fig. 2) acts by elastic force, pulling upward and outward by means of webbing, which exerts its power through the intervention of a catgut cord passing through an eye.

Fig. 3.

As will be seen by Fig. 3, taken from a recent photograph, the patient walks upon the soles of both feet, and although there is slight deviation at the medio-tarsal joints, yet it would scarcely be noticed in the right foot, and in the left does not interfere with walking nearly as much as does the rotation at the knee-joint, which was so marked a feature in this case.

To correct this deviation of the tibia upon its long axis, spiral spring action taking its support from the pelvis (as in the apparatus of Dr. Gregory Doyle) has been tried with some benefit; but no operative procedure promises much success, and the patient is being educated to walk with out-turned toes, which she is perfectly able to do when her attention is fixed. The patient wears an apparatus upon both feet, although she can walk

Fig. 2.



perfectly well upon the right foot without it. She uses no cane, and can easily accomplish a mile. There is rigidity of the right foot, but she climbs stairs without assistance.

Dr. Willard said that when he first saw the patient he felt that a wedge section would be required, as the deformity was most rigid and extreme. He was now satisfied, however, that the child had better walking feet than she would have had after tarsotomy.

He then reviewed American, English, German, and French authors (these quotations will be published in the *Transactions of the Pennsylvania State Medical Society*), showing that the majority of patients, after section of the bones, either walked with the aid of apparatus, or had very rigid feet, or required further interference surgically, so that after running the risk of a serious operation, which had destroyed several lives, they were really in no better condition, and had not as flexible feet as those who had been the subjects of tenotomy and stretching.

Tenotomy was a safe operation, and after tendinous resistance had been overcome, he was not afraid to use what some might call extreme force, since the rupture of a ligament, or even the fracture of a bone subcutaneously, was a small matter compared to the opening of cancellous tissue, and the starting of an inflammation in the tarsal joints, which are so prone to destructive change.

Antisepticism had undoubtedly rendered the operation far safer than in former times, but the risks of subsequent caries could not be wholly avoided.

Davy had certainly been exceedingly fortunate in his twenty-two cases reported up to June, 1882, with but one death from septicæmia; yet even four and a half per cent. of deaths was great when compared with the innocuousness of tendon division. One certainly could not see sufficient reason for his risking so serious an operation upon an infant sixteen months of age, in whom the bones could not yet have become wedge-shaped

from walking pressure, and in whom *redressement forcé* would probably have secured an excellent result. The intelligent exercise of even great force, when regulated by the hands of a practiced surgeon, would seldom produce serious injury.

The speaker then quoted from several authors as to the extent to which such force could be carried. Subcutaneous section of the calcaneo-scaphoid, and other, tarsal ligaments, as practiced upon other articulations of the body in old dislocations, etc., would be preferable to open incision as performed by Phelps and Post.* In adults, where the bones had become badly distorted and wedge-shaped, in which cases there had formerly been only two courses of treatment to be pursued, *i. e.*, either the "let-alone policy," as advocated by Guerin,† or amputation, Dr. W. believed that tarsotomy offered a decided advantage; but in children under ten, he would thoroughly test the virtues of powerful force, associated with subcutaneous sections, before resorting to the graver expedient. Not every case that has relapsed after tenotomy, was incurable, since kind(!) parents frequently defeat the best efforts of skilled surgeons. It was in these cases of rebellious parents that plaster of Paris has proved a most useful assistant, taking the control of the case entirely out of the interference of patient or friends.

As regards the forms of operation, *i. e.*, partial anterior tarsotomy, or excision of the cuboid: complete anterior tarsotomy, or wedge-shaped incision by saw or chisel; and posterior tarsotomy, or resection of the astragalus, the speaker believed that as both the former and the latter were uncertain and often insufficient in results, that in those cases where the operation was demanded it should be complete, the wedge being so shaped that it should present two bases, one looking outward, the other toward the dorsum, in order to preserve to a certain extent the normal arch of the foot.

In the eighty (80) operations upon sixty-eight (68) patients which he had collected, wedge-shaped tarsotomy was done fifty-eight (58) times upon 50 cases, with 3 deaths; the astralagus was resected 13 times on 11 patients, with no deaths; and the cuboid, 9 times in 7 patients, without a death. One patient died of septicæmia, one of hospital gangrene, and one of an old and serious heart complication. It has been well remarked that this operation should be viewed in two lights—one as regards its danger, the second in relation to its ultimate results in giving useful feet.

The conclusions drawn were:

1. In children under ten, even in extreme degrees of deformity, powerful manual force, with subcutaneous division of the contracted tissues, will restore the foot without section of the bones, and should be first attempted. The degree of force required may be great, but even if carried to rupture of the tarsal ligaments still leaves the injury subcutaneous.

2. Fixation in the straightened position is best maintained by plaster-of-Paris dressings for a few weeks, after which daily stretchings will give a more pliable and better walking foot than is obtainable after tarsotomy.

3. Cases should not be considered incurable by moderate means, simply because they have relapsed after imperfect treatment. Careful supervision may still accomplish a good result.

4. Tarsotomy is a valuable operation in old cases wherein the bones have become wedge-shaped and irreducible. It should always be done antiseptically, and the removal of a wedge-shaped piece by saw is preferable to excision of either cuboid or astragalus.

5. Three deaths in fifty-eight cases of tarsotomy shows the great danger of the operation as compared with tenotomy, in which there have been scarcely that number of fatal results in the thousands of cases operated upon.

Dr. Joseph B. Potsdamer followed with a paper entitled,

BRONCHITIS AND PNEUMONIA OF RHEUMATIC ORIGIN,

in which he said that the most voluminous writer on this subject is Dr. Thos. H. Buckler, of Paris. Laennec described this affection under the term "dry catarrh." Trosseau, in his "Clinical Medicine," vol. 2, page 663, ed. 1873, Philadelphia, gives a description of rheumatic pneumonia.

The anatomical seat of this disease is in the white fibrous tissue of the bronchi, which is inflamed. It does not affect the mucous membrane primarily. Pneumonia is always secondary to rheumatic bronchitis, and may occur in the same lung. Proper rheumatic treatment will often save the patient. Further, it bears a direct relation to general rheumatism and rheumatic endocarditis.

In pneumonia there is congestion of the capillaries of the depurative circulation. On the other hand, congestion or inflammation of the bronchial structures affords an example in which the capillaries of the nutritious arteries and veins are involved.

The symptoms of the acute variety of rheumatic bronchitic are profuse, irregular sweats, inordinate sensibility to cold, transient and irregular flushings of the face, and either a constant or a paroxysmal and unproductive cough. pulse and respiration not much altered. Pain most constant on coughing. Rheumatic bronchitis degenerates into a chronic form, with dry cough, rapid respiration, and occasionally ærated mucous expectoration. Auscultatory signs are negative, except an occasional sibilant râle. The diagnosis is usually made by exclusion. Supervention of cardiac disease is of great value in diagnosing the present affection.

In rheumatic pneumonia there is almost always a premonitory cough; in idiopathic pneumonia there is none. Rheumatic bronchitis is a most insidious disease, going on for months, at times with no further annoyance than is produced by a dry cough, occasional slight chest pain and soreness, the patient feeling no indisposition, having a good appetite, sleeping well, and attending to business as usual. Symptomic pneumonia is always preceeded by rheumatic bronchitis. It may present all the symptoms of idiopathic pneumonia, but what gives it its distinctive character is, that all the symptoms of pneumonia may suddenly disappear without the gradual decrease observed in inflammatory pneumonia, and it is usually confined to a smaller section of the lung tissue.

*New York Med. Record, 1881, xx., p. 337.
†Bull. Acad. Med., Paris, 1882, p. 1039.

The prognosis is favorable, provided the disease is recognized early, otherwise the pneumonic process may go on and the patient succumb, or the lung may break down and the patient eventually dies of consumption.

The treatment is the same as is indicated in acute rheumatic affections elsewhere. Salicylic acid and its salts or phosphate of ammonia being given, when uric acid and urates are found in the urine; lemon juice, when phosphates are present.

The next paper was on

CHRONIC ARTICULAR OSTEITIS OF THE KNEE-JOINT.

Dr. A. Sydney Roberts, of Philadelphia, read a paper on this subject, in which he said that he had chosen the term chronic articular osteitis as the one best expressing the pathological condition found in those lesions of epiphyses of the knee-joint that have usually been described by the older writers under the caption "Tumor Albus."

His reason for so doing has been by proper classification to refer directly to inflammation of the cancellous structure of bone, thereby avoiding the confusion that usually exists if the more general terms *arthritis* or knee-joint disease be employed. Before considering the main feature of the paper, viz., to bring before the Society a new mechanical splint, designed for the treatment of chronic articular osteitis of the knee-joint, Dr. Roberts hastily reviewed the etiology and pathology of the affection.

To meet the universally-recognized principles of treatment, *i. e.*, fixation of the joint and extension, he has designed the splint that he now feels justified, from the success that has attended its use, in presenting to the profession. It consists of two light steel padded troughs, that are firmly secured to the limb by encircling bands of surgical webbing, affording absolute fixation to the joint, when the extending rods are locked after adjustment. Three ratchet extension bars arranged in the form of a triangle are placed posteriorly corresponding to the long axis of the limb, placing within the control of the surgeon a power that will overcome the flexion and the tendency to the production of deformity, and at the same time produce extension. The extension rod acts directly upon the head of the tibia, and parallel with the line of contraction of the flexor group of muscles, obviating thereby the error in the mechanical arrangement of the popular Stromeyer's splint, or in all where the power is applied low down on the tibia to overcome flexion.

After which the Society adjourned.

In the evening receptions were held by Drs. P. D. Keyser and John B. Roberts.

Adulterated Butter and Cheese in New York.

The New York Legislature has just passed the bill which has been under discussion for some time, prohibiting the sale or manufacture of all adulterations of butter or cheese. It is to take effect on July 1, 1884.

The careful investigation carried on by the committee of the Legislature brought out many curious and disagreeable facts. It was shown that the manufacture of oleomargarine might be cleanly, and the articles used not unhealthy; but that in many cases this was not true. It also appeared that it was often difficult to detect the difference between genuine butter and oleomargarine, except by the use of chemicals, and that oleomargarine was never sold under its real name, but as real butter. It was therefore recommended that the manufacture and sale be absolutely prohibited, as all attempts to regulate the business had failed. A bill embodying this recommendation was introduced, and has now passed both the Assembly and Senate.

The Woes of Importing Chemists.

A number of the importing firms of New York city dealing in dye stuffs, chemicals, and drugs, have sent a memorial to Congress requesting that an investigation be made as to the methods of doing business carried on in the Appraiser's Department of the New York Custom House. They claim that their business is delayed and made harassing and expensive by the reckless charges of under-valuation preferred against them by the custom-house officials—charges which have always been shown to be groundless. They state that they are unable to get possession of their goods after the custom-house has gotten hold of them, except after long delays, and that it frequently happens that goods needed for speedy delivery are held one, two, or three months. In some cases the importers are put to heavy loss because they are unable to fulfill their contracts. The custom-house officers deny these statements, and claim that their action was necessary to prevent frauds on the revenue. It is thought that an investigation will be ordered by Congress into the whole matter.

Items.

—In 1878 the importation of quinine was 17,549 ounces; in 1883 it was 1,055,764 ounces.

—At the recent convention of cane growers at Topeka, Kansas, it was shown that during 1833 Kansas surpassed all the other States in the Union in the production of sorghum sugar.

—It is asserted in the *Pharmaceutical Record*, May 1st, that if bees are kept in any locality where aconite grows, and collect the sweets from its flowers, such honey will exhibit the poisonous quality of that drug.

—Hogs in and around Denver have been dying in great numbers from lung disease. The appointment of a swine inspector at Denver is talked of, as it is supposed some of the diseased animals were disposed of there for human food.

—The American government has received an invitation to participate in an exhibition of dairy products at Munich, in October, 1884, under the management of the General Committee of the Agricultural Union of Bavaria, in connection with the Bremen Dairymen's Union.

—A western editor received a letter from an indignant subscriber, who said: "I don't want your paper any longer." To which the editor mildly replied: "That is all right. I wouldn't make it any longer if you did, because in that case I should have to buy a new press. The present length just suits me, and I am glad it suits you." It is to be hoped this "soft answer turned away wrath."